DOMESTIC ENGINEERING

PUBLISHED EACH SATURDAY
BY

Domestic Engineering (Inc.)

Jno. K. Allen, President and Treasurer.
Elmer Crawford, Vice-President.
Frank P. Keeney, Secretary.
E. D. F. Winslow, Asst. Secretary.

Jno. K. Allen, Editor.

MAIN OFFICES:
49-53 NORTH JEFFERSON STREET, CHICAGO, ILL.

SUBSCRIPTION RATES:

United States, Cuba and Mexico.....$1.00 a year
Canada and Foreign Countries.....$2.00 a year
8 shillings. 8 marks. 10 francs.
Single copies of current issue, 5 cents; copies of back numbers, 10 cents each.

REMITTANCES.—Subscriptions are payable in advance, and remittances should be made by check, Chicago draft, postal or express money order, in favor of DOMESTIC ENGINEERING.

CHANGE OF ADDRESS.—The old address should be given as well as the new, and notice should be received a week in advance of the desired change.

NOTICE TO ADVERTISERS.

Copy and cuts for advertisements intended for a particular issue should reach the office of DOMESTIC ENGINEERING on Wednesday of the previous week if it is desired that a proof of the advertisement shall be submitted. New advertisements can be received up to noon of Wednesday of the week of issue, but no proof can be shown.

Entered as Second-Class Matter at the Post Office at Chicago, Illinois, Under Act of Congress of March 3, 1879.

Whole No. 833. Vol. XLV. No. 9. Chicago, Nov. 28, 1908.

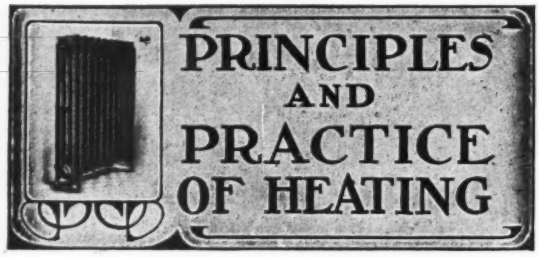
The plumber and fitter cannot hope to avoid the endless annoyances caused by defective material so long as he continues to estimate on, buy and install "competitive" goods. It is curious that business men cannot see that every time they install an article which in use will be found to fall short of standard, they are lifting a spade of earth from their business grave. A good rule for every buyer to adopt would be: "Buy none but advertised goods bearing the name of the producer."

Selling Price Ten Dollars: Actual Value Five Dollars.

There are some manufacturers whose brains are so calloused by wrong thinking they are unable to understand that they do not occupy a position entirely unrelated to other integral portions of the trade. **These misguided manufacturers** claim to **have no interest in their product after it is sold to the dealer,** and are **unwilling to consider the dealer a part of their selling force.** Suppose a dealer should display in his shop window an article labeled, **"Selling Price $10—Actual Value $5."** Dost not think, gentle reader, the manufacturer would soon develop a sudden interest in his product, even though it had passed out of his hands? **Thou surely dost.** It seems to some people that it would be well if the manufacturer should extend his idea of his selling organization so it would include the dealer. In that case he would find himself **anxious to consider the interests of the dealer and protect them.** He would appreciate and protect the dealer's loyalty, and recognize that **after a jobber or retail dealer had for years** and in the face of fierce competitive hammering, **been loyal to his line of products,** he should be entitled to receive protection and consideration. It is frequently the case that **a dealer builds up a good trade** on certain manufacturers' products only to find the manufacturer coming to believe he **must sell** his goods to **"any old jobbers or dealer."** The result is as old as the oldest tale in commercial history: **The loyal jobber's trade is destroyed—cut to pieces—no profit left.**

If trade is mutual and reciprocal, **why should not the manufacturer be interested in seeing to it that his entire selling force, which includes the dealers as well as his own salesmen, receive a fair reward for the contribution they make in distributing his product?**

Some dealers, jobbers and manufacturers enjoy flirting around on the outside of organizations, ready and willing to profit by the work they do, but **under no moral obligation to conform to an established policy, and always ready to take undue advantage of their competitors.** It is the custom in some lines of manufacture to **allow salesmen a percentage, or bonus, on the net profit on sales beyond their stipulated remuneration;** this is undoubtedly an inducement to a salesman to refrain from profitless price cutting. If this principle is a good one, **why not apply it to the manufacturer's entire selling force,** which includes every dealer who handles his product? Thus the manufacturer discriminates, and quite properly so, in favor of the most profitable salesman. **Why not grant a slight concession to the dealers co-operating to maintain conditions under which both can "live and let live"?**



Progressive Heating—VIII*

EDITED BY JNO. K. ALLEN

Associate Member American Society of Heating and Ventilating Engineers, Member American Society of Inspectors of Plumbing and Sanitary Engineers, Member Royal Sanitary Institute of Great Britain.

Written expressly for "Domestic Engineering." All rights reserved

The transmission co-efficients for the various styles of radiators are not at present available for the reason that the heating trade have never demanded such information from the manufacturers.

Many heating contractors seem to have the idea that one style of radiator will give off as much heat as will any other type, and while this attitude is maintained by the heating fraternity there is little incentive to manufacturers to thoroughly test their product, or to spend money in an effort to produce radiators of higher efficiency.

The few radiator tests which have been made are of little practical value because some of them have been made under conditions which scarcely ever exist in actual practice.

Accompanying some of the published tests are diagrams showing the radiators set up on a platform

Here is some valuable information about the heating capacity of various types of Radiators

or pedestal in the center of a room, where the air can pass freely over the surface.

Radiators tested under such conditions will show a higher heat emission than when they are placed close to a wall, as is usually done under actual working conditions.

*Previous installments of this series of articles were published in the issues of April 11 and 25, May 9, June 27, August 15, October 10 and November 7. These numbers can be obtained for 10 cents a copy.

If the heating trade want more exact information in regard to heating material, let them make a demand on the manufacturers and it will not be long until the desired data are forthcoming.

Whether the emissive power of a radiator is 150 or 250 B. t. u. per square foot per hour, they all look alike to the average heating man and his customer, and, if after the radiator is installed, it does not produce the desired effect, additional surface is added until the temperature of the room can be maintained at the desired point. The failure to produce the desired temperature is usually attributed to some defect in the building, and thus radiation of the lowest efficiency has an equal chance with radiation of the highest efficiency.

As an illustration, suppose A is in the market for 1,000 sq. ft. of radiation; B offers a radiator which is rated at 7 sq. ft. per loop, but the actual surface of which does not exceed 5.9 sq. ft. The co-efficient on the rated surface is 1.3. With a temperature difference of 147°, 1,000 sq. ft. of this radiation will emit per hour 191,000 B. t. u.

B offers this radiator for 20 cents per sq. ft. or $200 for the 1,000 sq. ft. As the 1,000 sq. ft. will emit 191,000 B. t. u. per hour, the actual cost of the radiation is $0.1047 per 100 B. t. u., or a little less than 10½c per hundred heat units per hour.

C offers a radiator rated at 6 sq. ft., which is full measurement, and has a co-efficient of 1.7.

TABLE NO. 3.

RELATIVE EFFICIENCY OF RADIATING SURFACE.

Co-efficient.	Relative quantity of radiation required, in sq. ft.	Co-efficient.	Relative quantity of radiation required, in sq. ft.
2.50	66.0	1.45	114.0
2.40	69.0	1.40	118.0
2.30	72.0	1.35	122.0
2.20	75.0	1.30	127.0
2.10	78.5	1.25	132.0
2.00	82.5	1.20	137.5
1.95	84.5	1.15	143.5
1.90	87.0	1.10	150.0
1.85	89.0	1.05	157.0
1.80	91.5	1.00	165.0
1.75	94.0	0.95	173.5
1.70	97.0	0.90	183.0
1.65	100.0	0.85	194.0
1.60	103.0	0.80	206.0
1.55	106.5	0.75	220.0
1.50	110.0		

With a temperature difference of 147°, 1,000 sq. ft. of this radiation will emit 249,900 B. t. u. per hour.

C asks 22c per sq. ft. for this radiator, or $220 for the 1,000 sq. ft.

As the 1,000 sq. ft. of C's radiator will emit 249,900 B. t. u. per hour, the actual cost of the radiation is $0.088 per hundred heat units per hour.

Based on the actual heating effect of the two radiators, if B's 1,000 ft. is worth $200, C's 1,000 ft. is worth $261.50. In other words, it will take

about 131 sq. ft. of B's radiation to equal in heating effect 100 sq. ft. of the radiation offered by C.

Table No. 3 shows the comparative efficiency of radiating surface of varying co-efficients of heat emission.

All the quantities in the foregoing table refer relatively to a co-efficient of 1.65; that is, 100 sq. ft. of radiation with a co-efficient of 1.65 is equal in heating effect to 127 sq. ft. of radiation with a co-efficient of 1.3, or it is equal in heating effect to 82.5 sq. ft. of radiation, the co-efficient of which is 2.0.

At the present writing the difference in actual heat-giving qualities of the various types of radiation is as great as 75%. This difference may be due to short measurement, faulty design, or faulty installation.

For example: A radiator with a co-efficient of 1.8 may be boxed in under a window in such a manner that the co-efficient will drop to 1.0, a difference of 80%, or one radiator may be so designed that the co-efficient is 1.3, while another may have a co-efficient of 2.3, a difference of 77%.

Of course it is understood that this wide range in emissive power is due in part to the various heights, widths, etc.

(To be continued. All rights of republication reserved.)

What a Dollar Can Do.

A dollar buys a dinner,
A watch, a fountain pen;
A dollar buys a "winner"
At the races—now and then;
A dollar buys admission
To a goodly circus show,
And a dollar in addition
Buys your girl a chance to go.
A dollar buys a brier;
It buys a winter rose;
It won't put out a fire,
But it buys a pair of hose.
A dollar buys for Alice
A pound of candy sweet;
A dollar buys you malice
When you loan it to a beat.
A dollar buys the story
A clever fellow wrote;
It buys election glory,
Because it buys a vote;
A dollar sometimes buys you
The right to "see" four kings;
A dollar can surprise you,
It buys so many things;
A dollar buys an hour's
Delight, but when it's spent,
With all its buying powers
It hasn't bought content.

—Frank Roe Batchelder in "The Munsey."

Pipe Sizes for Low Pressure Heating Apparatus

By E. K. Munroe

How to secure correct Pipe Sizes for low pressure steam heating

The subject of correct sizes for mains and risers in a steam heating apparatus is very vital, as on it depends the successful operation of every installation, as well as the economy; it is therefore well to weigh the results carefully before cutting out too much pipe, or making the sizes so small that it becomes necessary to force the boiler and maintain high steam pressure in order to obtain circulation in remote corners of the steam heating system or at and near the ends of a one-pipe circuit layout, having drips at the ends. We have been chagrined rather than amused at some of the house heating installations made recently by "venturesome novices" who attempt to lay out and install plants with the expectation of heating a building all winter, but ofttimes meet failure.

One house in particular, which came under the observation of the writer, had 14 radiators containing 420 sq. ft., 7 radiators on the first floor and 7 radiators on the second floor. The boiler was 22″x22″x3′ 4″ rectangular having a ratio of 9.1 sq. ft. of radiating surface to each square foot of heating surface and about 24 sq. ft. of heating surface to each square foot of grate surface. The catalogue rating of the boiler was only 425 sq. ft., which was about 17½% more than its actual evaporating capacity. The result was that instead of 8 to 10 lbs. of coal per square foot of grate per hour being consumed the owner averaged up about 14 lbs. per hour, per day of 15 hours, during the winter of 1906 and 1907. The house being heated very much the same as though a furnace were in the cellar; one or two rooms always being uncomfortably cold, depending on the direction of the wind. The largest steam main in the above building was 2″ pipe, the bleeder at the end of the main being of ½″ pipe.

It is not wise to construct a one-pipe apparatus having a main starting from the boiler of a smaller size than 2½" unless the radiation does not exceed 225 sq. ft., including exposed pipe-work, the return connection to the boiler should be not less than one size smaller.

If there are two or more return pipes connecting to the boiler the cross sectional area of them all together should not exceed that of the supply main or mains.

There is but one reason why the mains can be too large, viz., condensation from exposure, which should be guarded against by pipe covering. Owing to the very rapid expansion of steam, which is usually about 80 to 100 feet per second at 5 lbs. pressure in 8" pipe, it is quite unlikely that excessively large size mains would prevent, or in any way cause, a failure in circulation, as was claimed; and furthermore it is an established fact that small or contracted mains do not give nearly as good results as larger ones. Regarding the size of direct radiator connections, the sizes generally adopted and listed in the radiator manufacturers' catalogues, which are very nearly uniform, are considered by the leading engineers conservative and are therefore accepted generally by heating engineers. However, we consider it quite unnecessary to use a larger valve than 1½" on any radiator under 158 sq. ft. Not only are 2" radiator valves extremely clumsy in appearance but they are expensive, and as the smaller valve will be found to supply a radiator quietly, as well as adequately, it is recommended as a safe venture. This is not common practice but may be resorted to and is a much wiser way to economize than by chopping down the size of one's pipe mains promiscuously.

The velocity given above applies to installations having reasonably large pipe sizes and is therefore low. It is a natural result that if the mains are very small the velocity is necessarily increased. This becomes a decided disadvantage always, as high velocities carry a certain amount of entrained water, which is necessarily present in saturated steam generated by cast iron boilers operating at low steam pressures. On this account it is a very good practice and sometimes quite necessary to increase the size of the horizontal branch connections to risers as well as radiators one size larger than the riser or radiator valve, owing to the grade and the necessity of the condensation returning through this pipe in an opposite direction to the steam flow. Larger rather than smaller size steam mains are considered good engineering practice; at the same time slightly smaller return mains are quite as satisfactory if they are wet, but if they are dry they should not be stinted in size.

Trouble is in store for those who depart from the set rules of practice. Steam engineering is no longer in its experimental stage, although there are those who are experimenting and will ever be, as we all have to learn by experience, however much it may cost. The cheaper way is to study and learn by the experience of others who have gone through the experimental stage.

The table* of pipe sizes, published on the opposite page, is a complete compilation of a number of similar tables and is intended for mains of ordinary length and conditions, which are not supposed to be covered. Due allowance should be made for extra long runs or unusually exposed conditions.

When steam pipes are run under ground through wood log covering they should be at least one size larger.

*This table is reprinted from the series of "Domestic Engineering's Data Sheets," in which it was originally published as No. 1 in the issue of January 18, 1908.

"The Dream Book." Every day about the city of Utica, N. Y., will be seen busy John W. Klein, of Charles Millar & Son Company, of that city. He is shown here completely equipped for the day's fray. Photograph by our Mr. Winslow.

"Indian Summer at Oneida." This is one of the most picturesque towns in New York State and in it there is no more popular a man than J. R. Smith, one of its leading contracting plumbers. Photograph by our Mr. Winslow.

Domestic Engineering's Data Sheets

1
Jan. 18, 1908

These sheets may be had printed separately for preservation in a binder. Price 10 Cents
Domestic Engineering, Chicago, 1907

Low Pressure Steam Heating Mains and their Returns for Gravity Circulation. Contributed by Ed. K. Munroe

Size of Main in Inches	Cross Section Area Sq. Inches	Size of Pipe Squared Multiplied	Sq. feet of Cast Iron Radiation	Velocities	Size of Wet Return Main Inches	Size in Inches of Dry Return Main Long Runs	Size in Inches of Dry Return Mains Short Runs	Size of Main in Inches
1	.862	50	50	15	¾	¾	¾	1
1¼	1.496	58	90	20	¾	1	1	1¼
1½	2.038	90	200	25	1	1¼	1¼	1½
2	3.356	90	360	30	1	1¼	1¼	2
2½	4.784	100	600	35	1	1½	1½	2½
3	7.388	111	1,000	40	1¼	2	2	3
3½	9.887	114	1,400	40	1¼	2	2½	3½
4	12.73	125	2,000	45	1½	½	2½	4
4½	15.96	133	2,700	45	1½	2½	3	4½
5	19.99	140	3,500	50	1½	2½	3	5
6	28.88	166	6,000	60	1½	3	3½	6
7	38.73	175	8,500	70	2	3½	4	7
8	50.04	180	11,500	80	2	4	4½	8
9	62.73	185	15,000	90	2½	4½	5	9
10	78.83	200	20,000	100	3	5	6	10
12	113.09	243	35,000	120	3½	6	7	12
14*	137.88	313	55,000	125	4	7	8	14*
15*	159.48	325	66,000	125	4½	8	9	15*
16*	182.65	331	77,000	125	4½	8	10	16*

*Outside diameters

Hot Water for Domestic Use—XIII*

EDITED BY JNO. K. ALLEN

Mem. Am. Soc. Inspectors of Plumbing and Sanitary Engineers; Mem. Royal Sanitary Institute of Great Britain; Assoc. Mem. Am. Soc. Heating and Ventilating Engineers; Hon. Mem. Chicago Architectural Club.

Written expressly for "Domestic Engineering." All rights reserved.

Another type of instantaneous water heater is shown in Fig. 16. In this heater the water does not come in contact with the products of combustion of the gas, as it does in the type of heater previously shown, consequently the heated water is much purer and can be used for cooking and other purposes, where the heated water will afterward be taken internally. The water in this type of heater has its temperature raised while floating through a pipe coil, exposed to the flame of gas burners. In the illustration, the casing is shown removed, to expose the interior construction of the apparatus, so the operation can be explained. Cold water enters the coil through the valve *e*, and the flow is regulated by the valve handle *b*, which controls both the gas valve and the water valve, so that gas cannot be turned on and lighted without the water being turned on and the coils filled with

Some types of Instantaneous Water Heaters and how to install them

water. The coils *c* are so made that the water flows immediately to the top row of pipes, and from there the coil is graded to where the water discharges into the fixture through the discharge tube *d*. By this arrangement of the pipe coil, most of the heat from the burning gas can be absorbed by the water during the brief time required to pass through the heater. The reason for this lies in the fact that the cold water in the top row of pipes is of lower temperature than the hot gases passing over them, and as heat travels from the hotter to the cooler mediums, a transfer of heat takes place from the hot gases to the water within the coils. If, instead of the cold water entering the coils at the top and discharging from the bottom tier, the order were reversed and the cold water entered the coil at the bottom and discharged from the top tier, the hottest water in the coils would be in the pipes at the top, while the coolest gases would likewise be found there. As in that case the temperature of the water within the top pipes of the coil would be warmer than the gases passing over them, there would be a transfer of heat, but in the inverse order from that desired. Instead of heat passing from the hot gases to the water, the temperature of the water would be lowered by an absorption of heat by the gas.

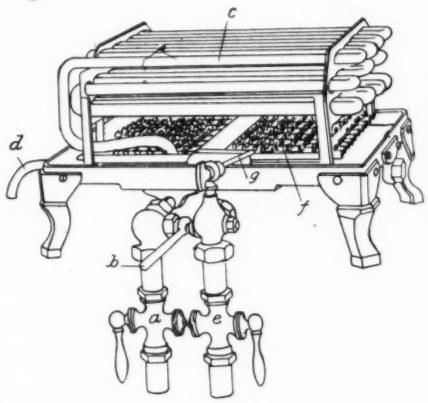


Fig. 16.

A supply of gas for the heater is controlled by the gas cock *e*, through which it flows to the burners located beneath the coils. A pilot light *g* serves to ignite the burners when hot water is desired.

It might seem unnecessary to remark that for water heaters, as well as for all other kinds of gas apparatus designed to produce heat, some modification of the Bunsen burner should be used. While there are from 650 to 700 B. T. U. in one cubic foot of illuminating gas, that fact is of no value in heating unless almost all of the possible heat is made available. This is not possible when burning the gas with a yellow flame such as that seen at a gas tip, but the possible heat in the gas can be made available by means of a blue flame, such as that produced by the Bunsen burner, which mixes a certain percentage of air with the gas before combustion or ignition. Instantaneous water heaters of whatever type can be changed to gasoline water heaters, whenever desired. There are many localities, for instance in suburban and country residences, where illuminating gas is not available; further, there are districts in some small cities where gas mains are not laid in the street, and it is well to bear in mind that if outside the fire limits of the city instantaneous heaters can be changed so they will be

*Previous installments in this series of articles were published March 7 and 21, April 4 and 18, May 2 and 16, July 11, August 15 and 29, October 3, 24 and 31. These back numbers can be obtained for 10 cents a copy.

available for heating water under such conditions. To do so, the gas burners in the heater must be changed to gasoline burners, as gasoline cannot be burned in an ordinary gas burner. In addition, a tank for storing gasoline must be erected somewhere, preferably outside of the building and a pipe connection made between the heater and the tank. Wherever the tank is located, and whether inside or outside of the building, it must be placed at an elevation above the level of the burners in the heaters, so that the gasoline will flow to the burners by gravity and under slight pressure.

When gasoline is the fuel to be used, the manufacturers will change the burners to suit, if, when ordering the heater, the plumber will but state that he wants the apparatus for burning gasoline.

The combustion of gas produces a greater or less amount of water vapor when the heater is in operation. This vapor condenses on the cool under side of the plates or pipes when the water is still cool, so that there is usually a slight drip from instantaneous water heaters, even when all the joints, pipes and connections are tight. As this drip is inseparable from all types of instantaneous water heaters, they should each be set over a drip pan to catch this moisture, and a waste pipe should be provided to carry off this condensation. It will not do to discharge the drip water through the waste pipe into the bath tub or lavatory the heater supplies, as the water would be very liable to stain the fixture. The best way would be to extend the waste pipe from the drip pan to a trapped and water-supplied plain iron sink, which will not be damaged by water stains.

A little practical point which should be remembered by the plumber when connecting up an instantaneous water heater is to connect the water supply pipe to the heater first. By doing so, no damage can result to the heater should the gas be turned on and lighted.

If, on the other hand, the gas were connected to the heater first, and through ignorance or malice some one were to turn on the gas and light it, the plates might be burned, twisted or otherwise damaged by the heat. When the water is connected to the heater first, as it should be, a thin film of water is flowing over the plates before the heat strikes them, and they are thus protected from damage.

In addition to the regular combination gas and water cock which comes with every heater, a separate ground-key stop-cock should be placed both in the gas-supply pipe and the water-supply pipe, so that the heater can be cut out of service at any time for cleaning or repairs, without necessitating the shutting off of gas from the entire building, at the meter.

(To be continued. All rights of republication reserved.)

When Bunny "Went the Voyage"

By Edwin Drood

Written expressly for "Domestic Engineering." All rights reserved.

"So long as I live," vowed Kelly, as he and the drummer entered the comfortable rooms of the City Club, "I'll never again discharge a man or boy for neglect of duty without first giving him a chance to explain."

"Thinking of that boy?" asked the drummer, seating himself at the table and proffering his cigar case.

"Exactly," was the reply. "It is six weeks since it all occurred, but I can see it as plainly as though it were but yesterday."

"Tell me the story," urged the drummer.

Kelly did not reply immediately, but sat puffing at his cigar until his features were almost hidden in a cloud of smoke. "It is a story I don't like to tell," at last he said, hesitatingly, for I don't figure in it altogether to the best advantage; you see," he continued apologetically, "I have always been a strict disciplinarian. With me, everything had to be considered from a business standpoint. I could tell to a nicety what the material for a job would cost; always kept strict account of my operating expenses, so that I knew what percentage to allow for running the business, and I tried to reduce the item of labor to a system, so I could tell beforehand what it would cost me to install a bill of goods. I am not a driver, understand. All I ask is a faithful day's work. I pay the highest rate of wages, treat my men well, and ask in return that they deal with me honestly. If I find anyone shirking his work, I do not fuss and wrangle with him about it, but quietly—let him go the voyage and get a new man to take his place. That is how things were when one day I stood in front of the new courthouse, talking to Casey, who had charge of the work. I was feeling in pretty good humor, for I had just signed for the new passenger station and the whole world had a rosy hue.

"What is it, my little man?" I asked, turning to a dirty faced barefoot little chap of about fourteen, who stood watching me, waiting for a chance to speak.

"Please, sir, do you want a boy?" he asked.

"No," I said, facetiously winking at Casey. "No, I don't *want* a boy."

"Do you *need* one?" he asked quickly.

"No, I don't need one," I replied, becoming more earnest.

He stood there a moment, digging his bare toes in the sand, half abashed, but wholly determined. Finally, as I was about to turn way, he said desperately, blurting it out, as though surprised at his own temerity:

"Well, boss, don't you have to have a boy?"

I stopped in my walk, and after one look capitulated, and that is how Bunny came to work for me.

"There, curled up on a bale of oakum, fast asleep, I found Bunny."

He was a quiet little chap, willing, even eager to do what he could, and it was not long before he was a general favorite with all the boys, every one of whom was anxious to have him for a helper. He was always early to work in the morning, and never seemed to mind staying a few minutes after the whistle blew, to put tools or materials away, and make everything ship-shape for the night. Things went on that way for several months, and he had become so useful to me that an increase of wages was in order, when suddenly, without any gradations to prepare us for the change, he commenced coming late to work. That in itself would not have been so bad, but in addition, he always flew home on the first stroke of the clock, and even when at work, seemed to lazy around and sit down whenever he could.

"It's the old story over again," I said angrily to the bookkeeper one day when he had been particularly remiss in his duties. "A new broom sweeps clean and this one isn't new any more. It's too bad," I continued more in sorrow than in anger, for I hated to think of the step I would have to take, "but I'll have to let him go."

"It don't seem to me that he is lazy, so much as worn out and tired," replied the bookkeeper, who was trying to help the boy. "Perhaps there's something wrong with him, and he can't stand the work so well as formerly. Why not speak to him and give him a chance?"

"He knows the shop rules," I answered shortly, "and realizes the penalty of disobeying them." Nevertheless I did seize the first opportunity to speak to him, and he did spruce up, bringing to his work some of his old time energy.

"Poor boy," muttered Kelly, "I did not know then what the effort cost him, or on my knees I would have begged his forgiveness, and done his work along with my own, if necessary. But Bunny never complained, and so long as the strength held out, he was as near as possible the same old willing energetic Bunny as of old.

Some few weeks later, I dropped into the new passenger station, shortly after one o'clock. Everybody seemed busy at work, and I went down to the shop and stock room to look around. There, curled up on a bale of oakum, fast asleep, I found Bunny. That was too much for me to bear. Here he was, after I had broken my rule by warning him, deliberately setting an example of neglect and indifference to the rest of the boys. In a sudden fit of anger, I roused him roughly, and before he realized what had happened, I paid him off and ordered him from the premises. "I warned you once," I said, as a parting shot, "that if you ever neglected your work again, you would have to go the voyage. You have been sleeping during working hours and now you must go."

That gave him a clue to what was the matter, and the grimy little hand with which he had been rubbing his eyes, dropped in astonishment. "Honest, he said, brokenly, looking frankly into my eyes, "I didn't know it was working time. I was so tired and fell asleep at noon, and didn't wake. Just give me another chance, won't you please?" he pleaded. "I'll work my fingers off. Honest, I will. I can't go home to Mother" he sobbed, "if I lose my place."

"You should have thought of that before," I replied, shortly, starting for the ladder, and the last I saw of Bunny that day, was a crushed looking little figure walking slowly in a dazed condition down the street.

On the second floor I met Casey. "I've fired your helper" I said to him, without introductory remarks.

"What for?" he asked in frank surprise.

"Caught him sleeping after one o'clock" I retorted shortly.

"Then it's me you ought to fire," he replied, bursting with indignation, "for I left him asleep."

"You did?" and it was my turn to be surprised.

"Yes, I did," he replied, looking at me with an angry glare. "That boy is one of the best helpers you ever had, and you know it; but he's not made of iron. For the last month his mother has been sick in bed and he had to take care of her nights, as well as work all day. Last night his little brother was down with the croup and kept him up all night, so when I found him sleeping at one o'clock, I did not wake him. Seems to me," he continued angrily, "that he worked hard enough for you, without counting the extra time he put in for nothing, to entitle him to a little consideration," and he strode angrily away. He was back in a minute, however, with a request that I have the bookkeeper send him the boy's address, and secretly I felt relieved, for I knew Maurice would take care of him until I could get him back. I did not say anything about this to Casey, however, but went right to the office, keeping up an appearance of unconcern, which was far from the way I felt.

"Harry," I said to the bookkeeper. "Send Bunny's address to Casey."

"Can't do it," he replied. "I never had it."

"Do you mean to tell me you don't keep the boys' addresses?" I asked, turning angrily on him.

"On the contrary," he replied quietly, "I do, but if you remember you hired Bunny on the job and I was never given his address."

That was true, I knew, but it did not relieve my feelings any, so I left shortly after for home. As I walked along the street, fast turning white with a mantle of falling snow, I could not keep the boy's pleading tones out of my mind, and I could fully realize his concern with winter at hand, no money, a sick mother, and no work. At the square I stopped to wait for my car. I had not been waiting many seconds when I became conscious of a voice saying something in which I was interested and unwillingly I became a listener. "I see that Bunny's back selling papers," the voice said. "What's the matter with his job?"

"He ain't got no job," another voice replied, "the boss sacked him."

"H'm," said the first speaker, "he's going to get stuck tonight. Took twice as many papers as anybody else."

"He's going to stay out till he sells them," returned the newsboy, who seemed to know. "Says he will have to so he can get some medicine for the kid."

My car coming along at that moment I was spared any further remarks, and having mentally vowed to hunt the boy up in the morning and put him back to work, my conscience became so eased that I was soon buried in my paper, and shortly reached home.

That night I went with Brown to a meeting of the Association of Master Plumbers. It was almost midnight when the meeting was over and we started

"Tenderly I lifted him and carried him to the drug store on the corner."

toward the square to catch our car. As we neared the corner, I caught sight of a little figure, without overcoat, leaning against a corner and shivering and numb with the cold, for a big drop in temperature had followed the snow. It was Bunny, and my heart smote me when I realized that I was responsible for his suffering. I started forward to greet him when a car came rumbling along and he darted forward to meet the passengers. Somehow, I don't know what happened next, but he must have slipped on the treacherous pavement and fallen under the car. There was a wild clanging of bells, a quick reversal of the motor, a loud clamor of voices, and when I reached his side, only a horribly grewsome rumpled up ball of clothing showed me what was left of Bunny. Tenderly I lifted him and carried him to the drug store on the corner. Then I bent over him, noting the labored breathing and wondering

would he ever recover. How I prayed in those few brief moments nobody will ever know, and it seemed hours to my anxious mind before I heard the clang of an ambulance. Bunny seemed to hear it too, for his eyes opened, a look of surprise passed over his face, then he said pleadingly.

"Honest, boss, I didn't know it was working time. Won't you give me another chance? Mother is sick, and what will I do if I have no work? I can't get medicine for her."

"Hush," I said, "you will come back to work as soon as you are well, and I will pay your mother while you are sick."

He seemed to realize then for the first time, the condition he was in, and a sad smile came to his lips while his eyes filled with tears.

"Mr. Kelly," he said, his voice sinking lower and lower, "I know I am going to die. I can feel it here," and he tried to put his hand to his heart. "Tell mother, please, that I stayed out late to get money for medicine for Albert's croup. You will find the money in my trousers—pocket," he continued, so low that I had to put my ear to his mouth to catch the words. "Tell her that I love her and Albert, and Oh, honest—boss—I—didn't—know—it—was—time—to—be—at—work." The poor bruised head fell back, the body stiffened out, and Bunny had answered the last long call.

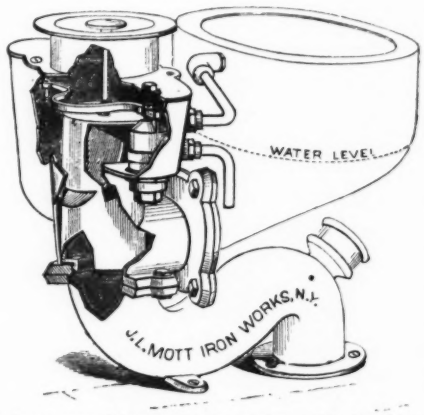
Whosoever therefore shall humble himself as this little child, the same is the greatest in the kingdom of heaven. And whoso shall receive one such little child in my name receiveth me: but whoso shall cause one of these little ones which believe on me to stumble, it is profitable for him that a great millstone should be hanged about his neck, and that he should be sunk in the depth of the sea.—*Jesus.*

In Early Days—XIII

By Herbert S. Renton

The Period of the Plug and Plunger Closets

"The fan or water spreader in the bowl is a new and ingenious device, washing the bowl in a manner superior to the ordinary fan, or other methods now in use" quoth the catalogue of Mott's Specialties, 1881, in setting forth the merits of the Demarest closet. Special stress was laid on the supply valve as the first feature. "Entirely reliable under any pressure up to 150 lbs. its action is so smooth and the operation of closing so gradual, that no hammering takes place, hence there is no noise or wear out to the working parts. The valve is very prompt and quick in action, washing and refilling the bowl quickly, at the same time rinsing the valve chamber, in which



The Demarest Patent water closet. Illustration from The J. L. Mott Iron Works' 1881 catalogue.

the water continues to run for a short time after it has ceased flowing in the bowl, hence, no soil can rise in the valve chamber and discharge valve or plug." "On the bottom of the discharge valve or plug, is sprung a flexible rubber ring in an annular groove, which rests on a concave brass seat at the bottom of the chamber, thereby insuring always a perfectly tight seat. By simply taking out the two screws in the pull cup, the discharge valve can be lifted out when any part of the closet or trap can be reached and cleaned out by hand."

The Demarest was made with a trap, also with an offset so it could be placed where a pan closet had been used, where the trap was under the floor, and a third variety had a straightway outlet. The "Demarest" and the "Zane" were about on a par but neither of them was so good as the old pan closet. It seems incredible "looking backward" that so much ingenuity could have been expended on these unsightly conglomerations of iron, earthenware and brass which the world repudiated in less than a dozen years. The thought about the whole matter was wrong. The right thought about it would have been that the water itself if allowed to follow well known laws would do all the work of valves, and plungers, and reservoirs—but everything seems destined to follow evolution slowly and painfully. In this case, however, it was a step backward as the old pan affair was better than all of these receivers and holders of water, which in spite of all the assurances to the contrary, became foul and filthy in use. But the sale was enormous nevertheless.

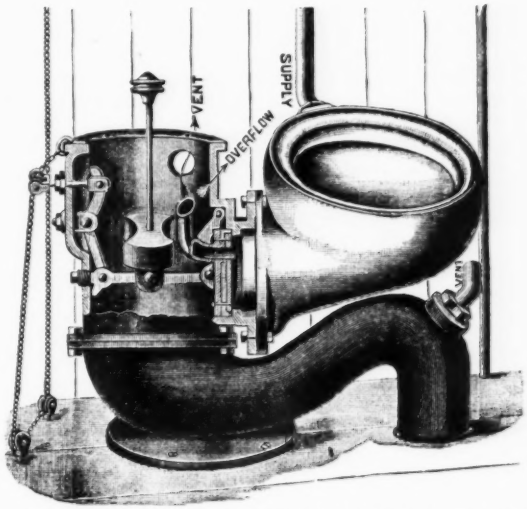
The text of the Demarest patent is not half so long as the Zane. The date was October 2, 1877, issued to John Demarest, New York, and set forth four claims:

"1. The combination with the basin a, and valve chamber c of the hollow cylindrical discharge valve closed at the top, and provided with a dam and an overflow opening substantially as set forth. 2. The water supply valve, made with a cylindrical main valve, u, fitting loosely the case, f, and closing upwardly, and an auxiliary valve closing an opening through the main valve, substantially as set forth. 3. The valve cylinder, f, within the chamber e, and provided with holes in said case, f, for jets of water to cleanse the interior of the said chamber, substantially as set forth. 4. The spreader made of the tubes 12 and 13 and having a slit 14, and provided with the adjusting screw 17, substantially as set forth."

Plumbers were convinced that the day of the old pan closet had gone by and that a new era had arrived—so they put in the newest and best advertised goods but with a good deal of grumbling as they knew that a satisfactory solution of the closet problem had not been reached. Huber and Henry C. Meyer began to transfer the machinery from the closet to the cistern and some of the levers and cranks used by these men in tanks were so clumsy and elaborate, to work service boxes at one time, and the main valves at another, that they were a kind of Chinese puzzle.

Along in 1882 came the Kelly Bros., of Chicago, with their tight tank which with the Kelly cock and hopper not only solved problems of anti-freezing but gave to the world a genuine invention of incalculable value. The water compressed the air in the round iron boiler, and the air struck back at the water at the first chance and sent it scouring down the hopper washing everything out as clean as a whistle. Then the Kelly cock was a regular open and shut game and beat everything in sight. I am pleased to recall that Renton Bros. were the first agents in the east for Thos. Kelly & Bros., who at that time were on Dearborn street.

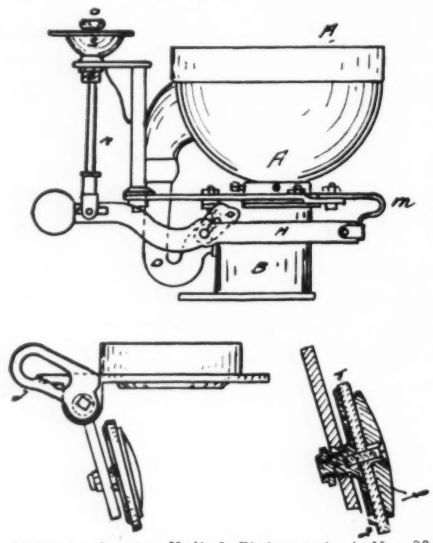
An interesting fact showing "hind sight" is that the Kelly valve and tight tank patents were offered to L. Wolff & Co. for five hundred dollars in 1882, but Mr. Wolff refused to give that amount. Thos. Kelly & Bros. were very glad of it for during the life of the patent the L. Wolff Mfg. Co. paid Thos. Kelly & Bros. more than twenty thousand dollars in royalties—some difference between the price offered and the price received, and Kelly Bros. made a profit for themselves manufacturing these very articles of over two hundred thousand dollars.



The Non-Such Lockout closet (J. W. Birkett's patent). Illustration from Renton Bros.' 1884 catalogue.

In 1884 the firm of Renton Bros., 105 East Ninth street, New York, of which I was a member, manufactured a Toggle Joint closet which was unique if nothing else. It was called the Non-Such Lockout closet. This is part of the prospectus: "The Non-Such Lockout closet, invented by Mr. J. W. Birkett, president of the Master Plumbers' Association of Brooklyn, and manufactured by us is by far the most perfectly constructed and satisfactory closet ever made. It is positive in action. A perfect lockout against foul odors is secured in the valve which closes on a brass seat and is operated by means of a knuckle joint so arranged that one movement suffices to empty the closet and open the cistern valve simultaneously. It is supplied with a plug to take up the wear. The principle reduces wear and friction to a minimum. A novel feature is the overflow which is in the valve seat itself—the water in the bowl, when closed always being above the outlet." This item on the circular amuses me now. "The Non-Such is a complete sanitary fixture and the vexing problem: 'Where shall I get a good closet?'—is solved." But the problem was not solved by a good deal and with all due respect to dear old Birkett who has gone into the shadows these many years—this toggle joint affair was about as poor an article for the purpose as

could well be devised. It was used by Mortimer J. Lyons, George Cummings (dear, positive old George), Martin Fallon, John Brown, McCormick & Knox, George Coger and other Brooklyn plumbers; some of them high up in the councils of the National Association of Master Plumbers. It was adopted by the Brooklyn Fire Department—the big stores like A. D. Matthews & Sons, et al., but it was **no go** although **non-such.** Edward Murphy said to me, "I am sorry to see you making any kind of a mechanical closet because the washout is coming into universal use and when I see anyone trying to sell a mechanical closet I pity them." Mr. Murphy was a prophet. There never was a better man to deal with than James W. Birkett, but while he lived up to his contract to the letter the **non-such** represented a loss of between three and four thousand dollars, and I felt like Edward Harrigan when he said in the Mulligan Guard, "The **last fruit** I had in this city was a **clam** and I want **no more of ut."** But the Birkett closet is typical of an interesting era. Dalton & Ingersoll, of Boston, and Cooper, Jones and Cadbury, of Philadelphia, made some ingenious and well constructed closets.



The Hellyer closet. United States patent No. 234,570, granted November 16, 1880.

By making the closet very carefully, The Meyer-Sniffen Co. (formerly Henry C. Meyer), made a successful bid for a large trade in the celebrated Hellyer closet U.S. patent No. 234,570, Nov. 16, 1880. Samuel Hellyer, London, England, assignor to Henry C. Meyer of New York. This was thought to be the real thing, and architects specified it everywhere but essentially it was not as good as the Birkett. On account of its great vogue I give the specifications of the patent. The China metal and rubber valve discs fastened together, and so mounted as to have a rotary and then a rocking or universal joint movement, to seat in different planes was the cardinal feature. The whole is very interesting. "My invention consists, first, in a novel construction and arrangement of the flushing rim and apparatus of the basin; second in a novel form and arrangement of the valve; a novel arrangement of the lever, with a yielding fulcrum to relieve the valve, its seat and other working parts from too sudden jar and strain when the lever falls; a novel construction of disc valve and arrangement with its seat at the outlet of the hopper, such that there will be less liability for any collection and retention of particles of paper or other material upon the rubber bearing surfaces; a china disc—a metal disc—and a rubber disc fastened together by a central stud and screw and the whole so mounted that the valve is not only free to rotate about the centre of the disc composing it, but also capable of a certain rocking (or universal joint) movement so that in coming to its seat, it can seat itself in different planes, and **out of parallelism with the plane of the seat.** The valve is vibrated on its hinge by means of a lever which is pivoted at one end of a spring fulcrum and has connected to it near its other (weighted) end the usual rod of the pull-up handle. The valve opens **clear down.** The spring is secured at one end to the casting of the closet and has the lever pivoted at the other end. In this manner provision is made in the spring for a yielding of the fulchral point of the lever when it may be allowed to descend suddenly and the valve be allowed to come to its seat with a slam, the weighted lever yielding thus relieving the injurious wear and tear to which all the parts are subjected when the lever has an immovable fulcrum. The pull-up rod and the general operations of the closet as to the discharge of its contents, and the ingress of water to refill it are the same as usual. As before stated the valve is not only free to turn on its central stud, but is free to rock more or less out of a horizontal plane. Four claims follow:

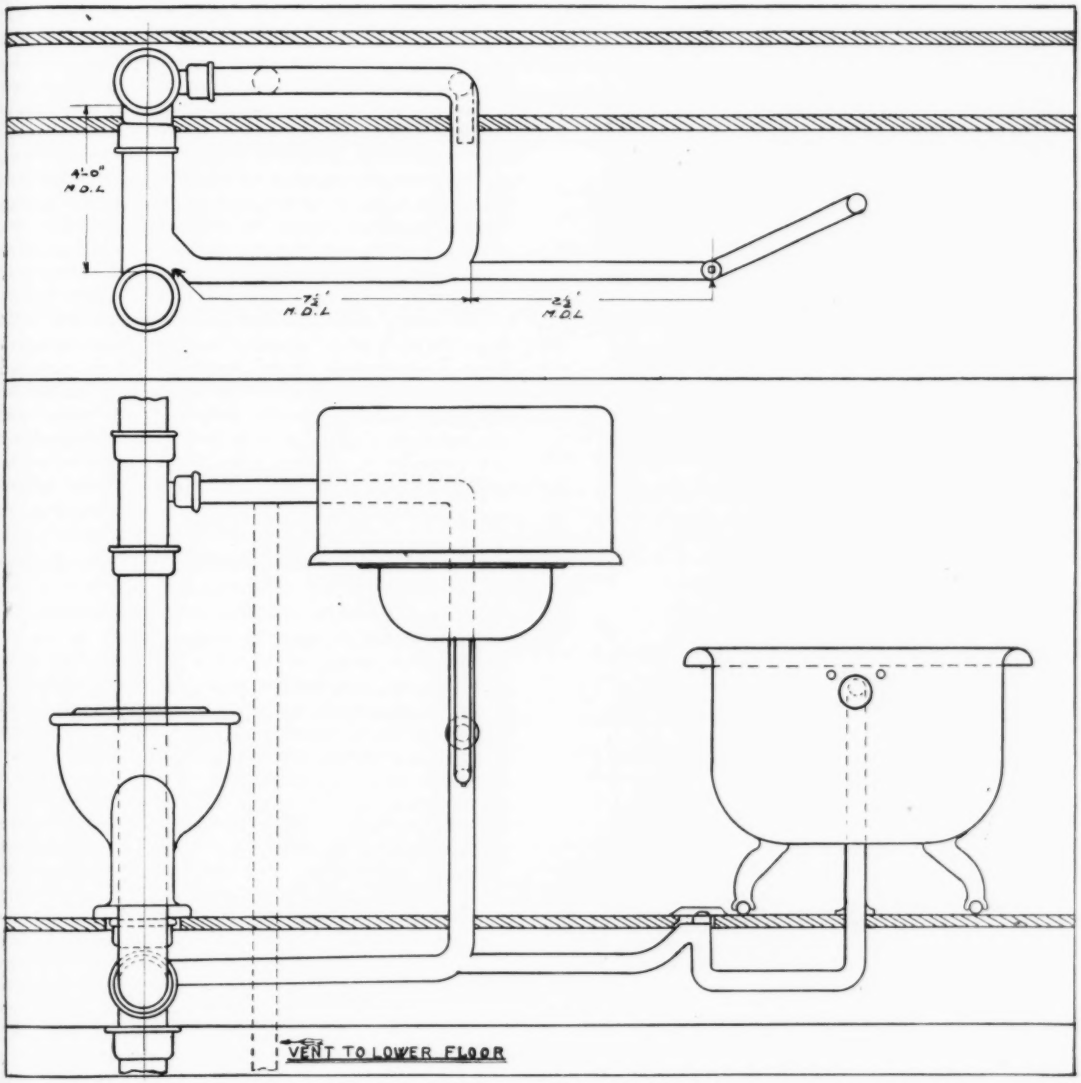
"1. A basin having formed at its upper edge a flushing rim, A, provided throughout its entire length with a series of long narrow slots or slit-like openings of equal length and breadth and equi-distant and operating to discharge sheets of water from the upper edge of the basin over its walls and toward the outlet. 2. In combination with the outlet of the basin and its valve seat, a self-adjusting valve which is capable of rotation, and also of a change in its plane, for the purpose of adapting itself to any inequalities in seating. 3. In combination with the lever H and its attachments, a yielding or springing fulcrum. 4. In combination with the valve seat at the outlet of the basin, a disc valve, composed of an upper disc, f, of china, or analogous material, a metal or other lower packing supporting disc, j, and an interposed rubber disc, h, the several parts being arranged to operate together in substantially the manner and for the purposes set forth."

The Hellyer was an expensive closet and very well made. Poor workmanship or material could not be tolerated or such a contrivance would never have worked. One thing can be said of Henry C. Meyer, he always did things well. He made a good trade journal, "The Sanitary Engineer." He made good brass work, well made closets (if not good ones) and he got good prices.

The Hellyer closet is gone but the reputation of Meyer-Sniffen Co. for good goods remains.

Proposed Layout for Plumbing in a Bathroom

In our issue of November 14, 1908, we published a design showing the proposed layout for plumbing in a bathroom as contemplated under the proposed Cleveland plumbing ordinance. This sketch shows a proposed layout for the same number of fixtures in a bathroom, but arranged in a different manner. In this sketch the upper portion shows the plan of the piping while the lower portion of the drawing indicates the elevation. The dotted lines indicate the run of waste and vent pipes from floors below the highest. If this plan of laying out the plumbing is adopted it is contemplated that if traps are more than five feet, and not more than ten feet from stack or vent pipe, an approved resealing or anti-syphon trap may be used. It is believed that this arrangement is good for four floors with a 2-inch main vent, and for five and six floors the main vent should be increased to 2½ inches at the fourth floor branch. For seven to ten floors the main vent should be increased to 3 inches at the sixth floor branch and the soil vent to 5 inches. In this design the bathtub wastes must be discharged above the center line of the closet discharge pipe.



Sketch showing layout of plumbing in a bathroom in accordance with the proposed plumbing ordinance for Cleveland, O. The arrangement of fixtures is different from that shown in our issue for November 14, 1908.

Let not grass grow on the path of friendship.

Wholesale Plumbing

The Wolverine Brass Works has been incorporated with a capital of $25,000 at San Francisco, Cal., by C. W. B. Cornelius, F. P. Redner, E. J. Pope, L. P. Dunkley and G. W. Wilson.

Winslow D. Jennings, formerly of Newcastle, Ind., is now located at Tavares, Fla., as manufacturers' agent for plumbing and heating specialties. It is his intention to cover the state of Florida.

The president of "Domestic Engineering" would like to correspond with two good traveling men, one who can handle a line of plumbing goods south of the Ohio river and one for a similar line, who is familiar with trade west of the Mississippi.

The Federal-Huber Company's San Francisco office is now nicely located in Rooms 642-644 Pacific building. The offices are in charge of A. D. Dennison, who reports business gradually improving and expects that next year will be a very good one in San Francisco.

The Pfau Manufacturing Company, of Cincinnati, O., has awarded the contract for the construction of a new plant at Mentor and Hustin avenues in that city. The main building, exclusive of lumber houses, etc., will be a four-story structure, 50x370 feet, and is to be completed May 1, 1909. The plant is to be thoroughly modern, including a complete brass foundry, wood working and stamping departments, and will cost $100,000.

A. H. Cline, Jr., salesmanager of the U. S. Sanitary Manufacturing Company, of Pittsburg, on being shown the complaint of the San Francisco master plumbers relative to enameled iron ware, stated that, while there may be unnecessary damage in the shipment of first class ware to the coast, he believed that the principal trouble was due to the fact that the demand in that locality was very largely for an inferior class of ware, with which a certain amount of trouble must be expected.

The matter of marketing "seconds" and other grades of blemished plumbing goods is receiving considerable attention at the preesnt time at the hands of the master plumbers at San Francisco, Cal., and a letter signed by the members of the Board of Directors of the Association of Master Plumbers of that city is being sent to all the members of the Association, reading as follows: "Plumbing goods marketed through wrecking companies and similar illegitimate channels work a direct injury to the legitimate master plumber. A great source of supply of the wrecking and similar misleading concerns has been that of the accumulated damaged goods; and the interests of these concerns have been cultivated largely by a misconception of facts and consequences upon the part of not only the manufacturers and jobbers, but upon that of the master plumber. It is most desirable that damaged and defective goods shall be eliminated as much as possible, and it is to that end that the legitimate manufacturer, jobber and master plumber is working. But, notwithstanding the desirability of maintaining a standard of equality and perfection, yet we must advance on practical lines, and recognize that there will be from time to time an accumulation of blemished goods which it should be perfectly proper for the wholesaler to expect to market; and when the wholesaler aims at protecting us by making us the preferred buyer, then we should reciprocate by buying the blemished goods direct from the wholesaler, thereby encouraging legitimate trade and protecting ourselves. It is not presumed that the individual master plumber can find a market for quantities of this class of goods, but all can find a market for some, and if we can relieve the wholesaler to a reasonable degree it will place him where he can hope eventually to confine the marketing of defective goods within the minimum, as he recognizes that, as a business proposition, it does not pay to handle defective goods. You are reminded that in the sale of goods to others than the legitimate master plumber, that it does not end with that sale, but that, consequently it is accompanied with considerable other supplies, and that, very largely, all the goods passing through illegitimate channels are installed illegally and in violation of proper sanitary requirements. You will readily perceive how disastrous to the proper and just interests of the master plumber is, and would be, the evil of selling defective supplies to interests that thrive on such a class of goods. You are respectfully requested to consider these statements, and whenever you are informed that a legitimate wholesaler has blemished goods for sale, that you will make such purchases as shall be wise from a business standpoint and mutually beneficial to the welfare of the master plumber, the manufacturer and the wholesaler in general."—This letter has also been submitted for the consideration of affiliated associations and members.

At a meeting of the Pittsburg Jobbers' Bowling League held last week to determine whether or not the league should be reorganized, it was decided that the reorganization again this year would be an impossibility, as several of the teams that have been members since its organization three years ago, claimed it would be impossible for them to place a team in the league, owing to members of their team being members of several of the teams in the various other leagues in this city and vicinity. This is very much to be regretted, as the league has been the means of bringing the boys in the various supply houses together at least once a week, and has resulted in promoting increased good feeling. There had been two cups offered two years ago, one by "Domestic Engineering" and the other by The Plumbers' Trade Journal, the provision attached to each being that it should be won two consecutive years before it became the property of any team. The former cup was won both years by the team of the Bailey-Farrell Manufacturing Company, and became the property of that team, but the latter cup was won the first year by the Pittsburg Supply Company, and last year by the Standard Sanitary Mfg. Company. It was necessary to make final disposition of this cup, so all teams entered into an agreement that the captains of last year's teams should each roll off a series of three games each, and on the same alleys that the regular games had been rolled on in the past. The captain making the highest three game score was then to take possession of the cup for his team. An additional proviso was added, to the effect that should the league ever again be organized, that this cup should

again become the property of the league, and should be contested for again under the same rules that have governed in the past. This arrangement was satisfactory to all concerned, and the roll-off resulted in the cup being won by J. H. Holland, captain of the Kelly & Jones Company's team last year. Mr. Holland's score for the three games was 506. The scores of the seven other captains were as follows: Wilde, of the Standard Sanitary Manufacturing Company, 487; Lamberger, of the Pittsburg Supply Company, 471; Fine, of the United States Sanitary Manufacturing Company, 470; Bryar, of the Bailey-Farrell Manufacturing Company, 446; Kern, of the Harris Pump & Supply Company, 385; Ryan, of the Standard Manufacturing Company, 363; and Kelly, of the Iron City Sanitary Manufacturing Company, 336. There were also a number of other prizes that had been offered to be disposed of, and it was decided to select a man from each of last year's teams to compete for these on the same basis as the cup. These representatives, with the scores made, were as follows: Harrison, of the United States Sanitary Manufacturing Company, 512; Kimball, of the Standard Sanitary Manufacturing Company, 511; Kincaide, of the Harris Pump & Supply Company, 508; Sullivan, of the Pittsburg Supply Company, 491; Burgess, of the Standard Manufacturing Company, 456, and Norton, of the Bailey-Farrell Manufacturing Company, 377.

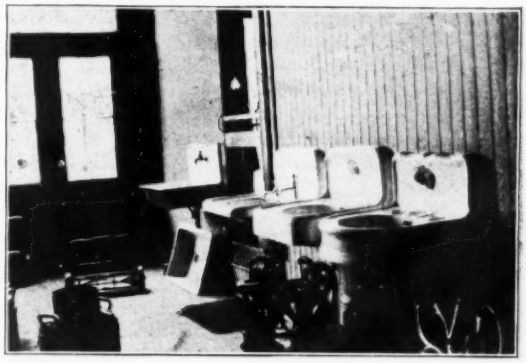
Wholesale Heating

The Hercules Iron and Supply Company, of Boston, Mass., has purchased a parcel of land at Harrison avenue, Randall and Fellows streets, Roxbury, containing 26,200 square feet, on which it plans to erect buildings for a branch of its Boston house.

Iroquois Engineering Company, of 1211 Fisher Building, Chicago, is the style of a new concern which has started in business under the management of W. L. Bronaugh, formerly manager of the Chicago office of the B. F. Sturtevant Company. The new company will act as manufacturers' agent for the Fitzgibbons Boiler Company, of Oswego, N. Y.

Thomas F. Cushing Company, of New York City, has purchased the stock, fixtures, lease and good will of the Harlem branch of the John Simmons Company, at 451-455 West 125th street and 50 Manhattan street, New York City, where the Cushing Company will conduct a similar business and where its offices are now located. Howard W. Walton, former manager of this branch and for many years connected with the John Simmons Company, has been selected secretary of the Thomas F. Cushing Company and will take an active part in its management.

The Schaeffer & Budenberg Manufacturing Company, of Brooklyn, N. Y., has sold its plant at Foxboro, Mass., to the Industrial Instrument Company, which was recently organized with Bennett B. Bristol, formerly of the Bristol Company, of Waterbury, Conn., at its head. The Standard Gauge Manufacturing Company, of Syracuse, N. Y., will operate the plant, and the property will be deeded to this company by the Industrial Instrument Company, as the same interests control both concerns. The plant at Foxboro, which is modern and well equipped, consists of two main buildings, 60x210 feet each, and a foundry, 60x150 feet. The officers of the Standard Gauge Manufacturing Company are: President, Watson E. Goodyear, of Naugatuck, Conn.; treasurer, Bennett B. Bristol; secretary and general manager, Arthur F. Mundy, of Syracuse, N. Y.



Attractive display in the up-to-date plumbing establishment of H. J. Siebert at Avon, N. Y. Photograph by our Mr. T. R. Mills.

Steam and Mill Supplies

The executive committee of the National Supply and Machinery Dealers' Association will hold its mid-year meeting at the Hollenden Hotel, Cleveland, O., at 10 a. m. on Wednesday, December 2, 1908.

The Magnus-Wilson Company, of Brooklyn, N. Y., has been incorporated, with a capital of $30,000, to deal in machinery. The incorporators are: Frank F. Boulton, Winfred L. Smith and Edward W. Nichols, 116 Broad street, New York.

Sparling & Holland, Inc., of Brooklyn, N. Y., has been incorporated, with a capital of $20,000, to deal in machinery. The directors of the company are: Laura Sparling, 573 East Second street; Philip R. F. Sparling and William F. Holland, 50 Fulton street, Brooklyn.

The American Machinery Company, of 651-659 West Forty-third street, New York City, has been petitioned into bankruptcy. Its liabilities are placed at $15,842 and its assets at $5,906, the latter consisting of machinery and stock, $3,046; accounts, $2,753, and cash, $107.

The Wright Specialty Manufacturing Company, of Camden, N. J., has been incorporated and will manufacture valves of iron, steel, copper, bronze and brass, and act as machinists, tool makers, founders, etc. The company is capitalized at $30,000, and Charles Wright, J. A. Binkey and E. H. Wright are the incorporators.

The Salt Lake Hardware Company, jobbers of mill supplies and hardware at Salt Lake City, Utah, is pushing to completion the construction of its new warehouse at the east end of the viaduct on Third West street. The building will be a five-story brick and concrete structure, 165x286 feet, and will be the finest warehouse in the entire intermountain country. The building will contain about six acres of floor space, and will afford unsurpassed facilities for the handling

of the immense wholesale business of the company. Eight carloads of supplies can be loaded and unloaded at the same time, and the building throughout will be constructed to permit the handling of goods with the least possible expenditure of time and labor.

Metal Market

New York Metal Market, November 24.

Copper, Prime Lake	$14.40
Copper, Lake, Arsenical brands	14.40
Copper, Electrolytic	14.15
Antimony, Cookson's	8.15
Lead	4.35

Chicago Iron Market, November 25.

Southern, No. 2 Foundry	$17.35-17.85
Lake Superior Charcoal	19.50-20.00
Lake Superior Coke Iron, No. 2 Foundry	17.00-17.50

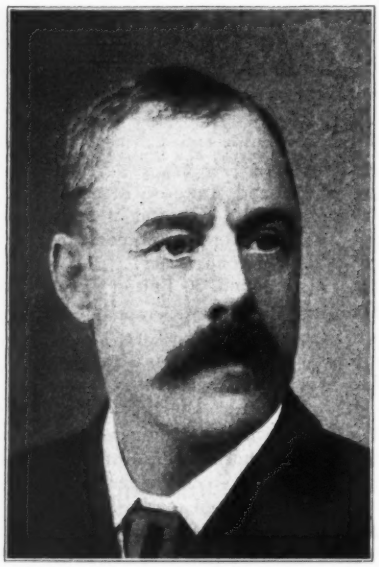
November 25, 1908:

Foundry iron was 50c more a ton than week previous
$5 less per ton than the year previous
Copper was ¾c more a lb. than the month previous
¼c more a lb. than the year previous

Cleveland, O.—Activity in the pig iron market has continued throughout the country, with large sales reported and a tendency toward higher quotations and sharp advances in some sections, says The Iron Trade Review. Many furnace interests are not disposed to contract beyond the first quarter of next year. In finished lines there is improvement, although new business is not nearly so heavy as in the case of pig iron. Many railroads are preparing to place orders for steel rails, but the controversy as to specifications has not yet been settled and the Pennsylvania is still insisting on the specifications which the mills declined to accept.

New York, N. Y.—There was a further decline in copper prices on the Metal Exchange this week. All grades of the metal were marked down ⅛c in the asking price to the basis of 14⅛c for electrolytic. The leading producers, however, were holding at 14¼c, although there was little business in progress. The dullness in the copper market was a continuance of the condition that has enveloped the market since the end of the recent buying movement, since the movement orders have not been of sufficient proportions among the copper manufacturing interests to warrant the purchase of further supplies. What stocks the consuming interests have on hand are sufficient to cover their current wants, and there is little likelihood that they will buy in either large or small amounts until their orders show a marked improvement.

Who's Who in Britain—VII



William Challoner, of Blackpool, England, has since 1893 been at the head of the firm of Thomas Challoner & Son in that town, in which he was formerly associated with his father. He is honorary secretary to the education committee of the National Association of Master Plumbers, and has taken a leading part in founding the new Institute of Plumbers. He represents his association on the advisory committee on plumbing. He is an associate of the Institution of Electrical Engineers and an associate of the Royal Sanitary Institute.

Association News

Chattanooga, Tenn.—The Master Plumbers' Association of this city has elected the following officers for the ensuing year: President, J. W. Martin; vice-president, James Lipp; secretary, G. A. Wood; treasurer, Ed. Bork.

Atlantic City, N. J.—The Master Plumbers' Association of this city has renominated the present officers for the ensuing year, as follows: M. H. Towhey, president; Clarence F. Albertson (Law building), secretary, and H. D. Brown, treasurer. The association reports a prosperous condition of the treasury and a healthy condition of the organization.

New York, N. Y.—Tuesday, November 17, 1908, will long be remembered by ex-President of the National Association of Master Plumbers, T. A. Hill, for on that night he was presented with the testimonial tendered by the Association at the convention, held in Boston last July. Mr. Doyle, of Philadelphia, journeyed from that city, in company with William McCoach, treasurer of the Association, to make the presentation. The testimonial consists of two handsome stick pins; one a platinum horse shoe set in diamonds and the other a diamond of no mean proportions, set in a circlet of rubies. Both are enclosed in a leather case with the following inscribed on a gold plate: "Presented to T. A. Hill by the Master Plumbers' Association of the United States, July 16, 1908." The Local Association had arranged a high class vaudeville, program and collations for the occasion and as previously announced there were "Doings at 155 East Fifty-eighth street." Among the guests were: William M. Brown, T. E. O'Brien, William Eiermann, Edward McDonald and Fred Platner from Brooklyn, some happy Bronxites and as previously stated Messrs. Doyle and McCoach from the "City of Brotherly Love." The evening was also marked by the sale, at auction, of the boxes for the annual ball to be held on

December 9th. Mr. Hill was appointed auctioneer and the sale furnished some good amusement for awhile. T. S. Cochrane, Jr., will "shine" in box 1, as usual. That these handsome material tokens of esteem from his fellow craftsmen are greatly appreciated and highly prized by ex-National President Hill, goes without saying, coming as they do from those he has served, as an enduring acknowledgment of the efficiency of his service, besides an expression of their good will toward him. That such a fitting testimonial should be given Mr. Hill at the conclusion of his term of office, reflecting as it does the appreciation of his efforts and commendation of his administration seems eminently proper. This should not only be very pleasing to him, but should also provide inspiration to future incumbents of this responsible position to give such an account of themselves that they may be similarly honored and rewarded.

CONVENTION DATES.

January 19-21, 1909.—Fifteenth annual meeting of the **American Society of Heating and Ventilating Engineers**, in New York City.

Plumbing Inspection

Chicago, Ill.—Alderman Clancy has just introduced an ordinance to the city council creating a new department with seventy-four jobs attached, which means a salary roll of more than $75,000. He would have it known as the department of sanitary and plumbing inspection, and its duties to look after the work connected with those two subjects. If adopted it would take away from the city health department a large share of its functions. The ordinance provides for a chief supervising inspector at $5,000 a year, an assistant chief supervising inspector, four supervising inspectors, five restaurant inspectors, four tenement-house inspectors, twenty-five plumbing inspectors and thirty-five rendering plant inspectors. The proposed ordinance has been referred to the judiciary committee.

Personal

J. H. Fenton, one of the leading plumbing contractors of Cedar Rapids, Iowa, was in Chicago this week, calling on some of his friends in the trade.

B. J. D. Blackmore has accepted a position as consulting engineer with the Downey & Kruse Company, of Milwaukee, Wis. He entered upon his new duties this week.

Andrew J. Burnett, known as the "honest plumber" of Melrose, Mass., has been re-elected as representative to the general court for a fourth term. He was opposed by a fellow townsman and won after a stiff fight both at the primaries and at the election.

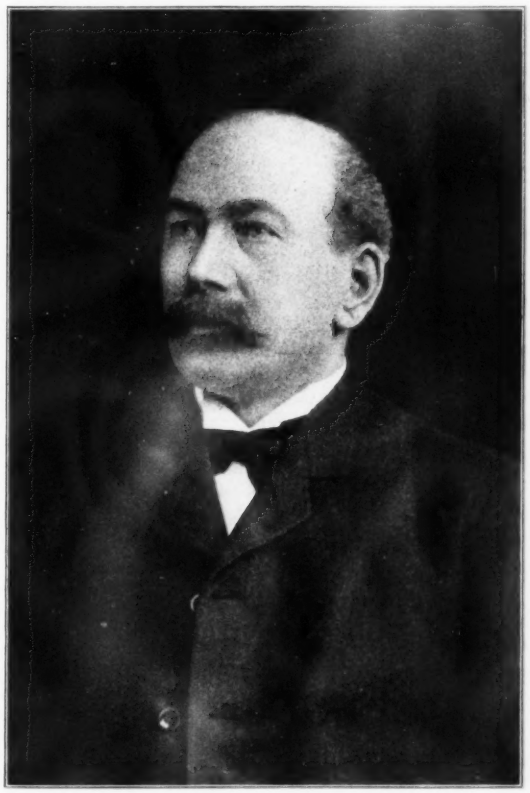
N. G. Rost, eastern representative of the Loew Manufacturing Company, of Cleveland, O., returned to New York last week from a visit to his company's factory, which, he says, is running full time—in fact, running behind their orders. Mr. Rost incidentally made a short trip through Ohio and reports business good in that section of the country.

J. E. and W. D. Haviland, of the plumbing supply firm of Spencer & Haviland, Brooklyn, N. Y., recently won a unique distinction, which carries with it considerable honor in yachting circles, by capturing the Thompson Trophy in the recent annual regatta of the Atlantic Yacht Club. The trophy is a silver cup standing nineteen inches high, with a capacity of twenty-six pints.

In the summer of 1905 a small plumbing shop was opened at 2142 Main street, Wheeling, W. Va. No one paid much attention to it at the time, nor did it cut any great figure in the plumbing business in that city. The stock carried at first was small, but to those who kept their eyes open, and especially the traveling boys as they visited the shop, it soon became apparent

---

Who's Who in America—III



C. J. Herbert, one of the most successful master plumbers in Chicago, was born in Ireland in 1855, and came to America with his parents in 1868. He is president and treasurer of the C. J. Herbert & Son Company, whose handsome plumbing establishment is located at 326 Dearborn street. Mr. Herbert has always taken an active and effective interest in association work. He served as sergeant-at-arms in the Chicago Master Plumbers' Association in 1890, did good work on the board of directors in 1896, and served the same organization in the capacity of treasurer in 1900. President W. H. Halsey, of the National Association of Master Plumbers, recently honored him by appointing him a member of the board of directors of that organization. This happy selection is considered a well-deserved honor for Mr. Herbert as well as a credit to President Halsey's good judgment.

that the stock began to get larger and it was only a short time before the shelves commenced to fill up, and the place became a very busy shop. During all this time no noise was made, but at the same time the party back in the shop was busy not only in the day time but night as well.

SAUL N. ROSENBERG.

In a very short time the plumbers of Wheeling began to realize that they had a new competitor in the field and the proprietor of this shop began to cut quite a figure in the plumbing business in that city and vicinity. The business grew and kept growing until the proprietor found that his shop was entirely too small, and began to look for larger quarters. On the first of December, 1908, he will move to 2130 Main street, and will have one of the handsomest plumbing establishments in the city of Wheeling. The proprieter referred to is no one else but Saul N. Rosenberg. By hard work, courteous treatment and square dealing, Saul has built up a large and profitable business, and is today one of the prominent plumbers of Wheeling. There is an old saying that "prosperity likes prosperity"; they mix well together. As Saul's business grew so rapidly, he found that he could not take care of it; so he decided he needed a partner whom he knew would look after the shop in his absence. The partner was Miss Rose Solomon, of New York City. The happy event took place this week at the home of the bride, 2737 Seventh avenue. After a trip to Niagara Falls, Washington and other eastern cities, they will return to Wheeling and make their home at 2130 Main street, in a nice cozy flat which Saul has prepared for them.

The story of a pleasing surprise to I. J. Brown, president of the Master Plumbers' Association of New York City, has just leaked out. The surprise took the form of a party arranged by Mrs. Brown on the occasion of his fiftieth birthday, October 13th, last. The master plumbers of the city had a hand in it, and they certainly did things up brown. On that day a meeting of the ball committee of the local association, of which Mr. Brown is a member, was held. After the meeting "Tommy" Cochrane waylaid the members and had them at the house, while T. A. Hill took charge of Mr. Brown and detained him on some pretext or other until the proper time. When he entered the house it was in darkness. Each of the guests were supplied with either a bell, a horn or other noise-making device, which they let loose simultaneously when the lights went on. It was a complete surprise, and held Mr. Brown spellbound for five solid minutes. A novel beef steak dinner was arranged for the gentlemen present. Each wore an apron, on which was painted appropriate catchy phrases, of which the following are typical: "Ike Brown's a jolly good fellow." "It's a pleasure to celebrate with him." "Many happy returns of the day." "Guess who it is." By a happy coincidence the present of a large cake containing fifty candles was duplicated. The first, it was agreed, represented the first fifty active, happy and fruitful years of the recipient's earthly career, and the second the next half century it is hoped he may remain with us with happiness being compounded at each mile post. After a flashlight of the assemblage had been taken the gentlemen joined the ladies in the parlor where the merriment lasted until the "wee sma'" hours. Among the mementoes presented to Mr. Brown on this occasion was a handsome woven gold watch fob with a pendant locket bearing his initials in monogram embossed thereon and set with a diamond. On the reverse side was inscribed: "Presented to I. J. Brown on his 'Fiftieth' by a few of his friends that knew. 1858, October 13, 1908." It is needless to say Mr. Brown prizes greatly this token of good fellowship from his fellow craftsmen. Among those present were T. A. Hill, T. J. Cummins, T. J. Toumey, Cuno Muller, Jas. P. Knight, John Smith, Milton Schnaier, B. F. Donohoe, Sandy Brown and T. S. Cochrane, Jr.

Obituary

August Snyder, Jr., son of **August Snyder, Sr.,** president of the Wilson-Snyder Manufacturing Company, of Pittsburg, Pa., manufacturers of pumps and plumbing specialties, passed on at his home on the North Side last Tuesday morning, after a lingering illness covering a number of years. Mr. Snyder was born on the North Side thirty-two years ago, and had resided in that section of the city for practically his entire life, although he has traveled extensively in recent years in the hope of improving his health. He is survived by his mother, father and sixteen brothers and sisters.

The Middle States

Calumet, Mich.—The Peninsula Heating and Plumbing Company has secured the contract to install plumbing and heating systems in the new Florida school.

Grand Rapids, Mich.—The Grand Rapids Plumbing and Heating Company has secured the contract for the installation of a heating system in the new opera house now being erected on South Market street.

Belleville, Ill.—The Karr Supply Company, of this city, has just secured the following contracts: Plumbing and hot water heating in Franklin school and St. John's orphanage, steam heating in the government building at East St. Louis. These contracts and a large amount of job work make W. J. Schlegel quite a busy man these days. Mr. Schlegel is treasurer of the Illinois State Association of Master Plumbers.

Omaha, Neb.—J. C. Bixby & Son have secured the contract for the plumbing in the new Omaha View school. The consideration is $4,500.

Wheeling, W. Va.—By an agreement between the Master Plumbers' Association and the Journeymen Plumbers' Union, the strike which has been on since May of 1907 has officially been declared off. Just what terms were agreed upon is not known, as little has been given out for publication. It is said that as fast as vacancies occur the union men will be taken back.

The Great Northwest

Okanogan, Wash.—R. J. Ross has just opened a plumbing establishment here.

Fond du Lac, Wis.—Gustav J. Schaurock has opened a plumbing and heating establishment at 16 Western avenue.

Neenah, Wis.—C. W. Nelson has secured the contract for plumbing and heating the new Chicago & Northwestern freight depot in this city.

Page, N. D.—Nicholas Thill, the well known plumber of this town, has just secured the contract for the installation of the Ashley system of sewage disposal without sewers at one of the finest residences in this part of the state.

New York News

LeRoy, N. Y.—The contract for the plumbing and heating in the postoffice block, which is the property of Yale University, has been let to F. L. B. Faft, of LeRoy.

Batavia, N. Y.—Roberts & Palmer are very busy filling a number of small plumbing contracts. In addition to this they are installing a hot water system for Dr. Mullcathy.

Northport, N. Y.—Edward Pidgeon Company has been incorporated, with a capital of $15,000, to do plumbing. The incorporators are: Edward Pidgeon, L. F. Pidgeon and S. Le Roy Ackerly, all of Northport.

New York, N. Y.—Rohman Plumbing Company has been incorporated, with a capital of $1,000. The directors of the company are: Regina Rohman and M. L. Rohman, 84 Penn street; J. Wolfson, 206 Throop avenue, Brooklyn, N. Y.

New York, N. Y.—The George Kreuter Plumbing Company has been incorporated, with a capital of $1,000. The incorporators are Thomas D. Kreuter, 1204 Tinton avenue; George E. Kreuter, 1011 Park avenue; Edward J. Maroni, 71 Nassau street, all of this city.

LeRoy, N. Y.—Although having been established only a short time, Stevens & Butler, of this city, have worked up a nice business. At present they are doing the plumbing work for W. H. Bishop, steam heating for Mrs. C. T. Woodward and hot water heating for the LeRoy Canning Company.

Attica, N. Y.—Bramer, Morgan & Reding, who conduct a very fine hardware and plumbing business, are at present engaged with the installation of several heating plants. Steam heating for Carl Meyers' residence in this town and hot water heating for Ed. Schirm, of Dorin City, are among these.

Brooklyn, N. Y.—Most of the building operations in Brooklyn at present are centered in Flatbush, and the plumbing establishment of T. H. Radcliffe, at 793 Flatbush avenue, is running full blast. Mr. Radcliffe is enjoying a good share of the work, as the following list of contracts will attest: Three two-family houses for Mr. Egan on Winthroup street, three cottages for William Sawkins on East Seventeenth street, one on East Sixteenth street for John Sawkins, a residence for Mr. Snyder on Mansfield place and two extensive alteration jobs, one at Ocean and Cateon avenues for Mr. Garretson and the other for Mrs. Marsh at 74 Ocean avenue. He has just completed extensive alterations in H. T. Parson's residence on Prospect Park West.

Brockport, N. Y.—F. H. Williamson, one of the younger members of the plumbing fraternity in Brockport, is succeeding in establishing a most lucrative business for himself. Contracts recently completed by this gentleman were for plumbing work in three new residences here.

"A Pleasant Reminder." This is a bevy of charming young ladies in attendance at the recent annual convention of the National Association of Master Plumbers, held at Boston, Mass. Photograph by our Mr. Winslow.

New Jersey

Passaic, N. J.—W. S. Clearwater Plumbing and Heating Company has just been incorporated with a capital of $10,000 by Winfield S. Clearwater, Harry Offord and William Gray.

Pennsgrove, N. J.—F. H. Elliott is taking care of the heating and plumbing in this section. At present he is busy with the installation of steam heating in the principal store in town, the Baptist church, at Pedricktown, and also a steam heating plant in that town for P. P. Sweeton and a windmill and new plumbing in house for Davis Sparks, at Oldman Station.

Southern Notes

Washington, D. C.—The Biggs Heating Company has secured the contract for the installation of a heating system in the Calhoun building.

Washington, D. C.—O. F. Kohl & Company, of 110 Washington avenue, N., will do the plumbing work in connection with the construction of a swimming pool in the University building.

Louisville, Ky.—The Stancell & Riddle Company has been incorporated, with a capital of $2,000, to conduct a plumbing business. The incorporators are: Charles L. Riddle, Jr.; Mrs. Susie L. Riddle and Mrs. Lida Stancell.

Louisville, Ky.—F. S. Schardein & Sons have been awarded the contract for the steam heating in the St. Matthews German Evangelical church, also for the installation of a hot water heating system for the parsonage of that church.

New Orleans, La.—The People's Co-operative Plumbing Company has been incorporated, with a capital of $200,000. The officers of the new company are: Daniel L. Ryan, president; R. J. Pelletier, vice-president, and R. J. Pelletier, Jr., secretary-treasurer.

Pennsylvania

Homestead, Pa.—The contract for the plumbing that will be installed in the block of twenty new residences that are being built here for Metzkes & Kaufman, also of this city, has been awarded to Wicks & Company. Each of the residences will contain a modern bath room and kitchen.

Oil City, Pa.—J. M. Reidy has received the award of the contract for the plumbing and steam heating systems for the new Levi Block that is being erected this fall in this city. The contract is a large one, as the structure will be three stories in height, and will require about fifty high-class fixtures.

Pittsburgh, Pa.—The W. N. Sauer Company has received the award of the contract for installing the plumbing system in the fine new twelve story business building that is being erected at Liberty avenue and Cecil Way for H. L. May. The structure will be known as the May Building, and will cost about $200,000. The contract calls for a large number of fixtures.

Everett, Pa.—Jones & Decker have been awarded the contract for installing a vapor heating system in the new Trinity Church at Saxton. They have also been awarded the contract for a vapor heating system for the new store building and business block being erected here for Thomas Fulton & Company, and the vapor heating system in George Stapleton's new residence.

Contemplated Work

Washington, D. C.—Sealed proposals will be received at the office of the supervising architect until 3 o'clock p. m., January 4, 1909, for the construction complete (except elevator) of the United States postoffice at Sault Ste. Marie, Mich., in accordance with the drawings and specification.

Washington, D. C.—Sealed proposals will be received at the office of the supervising architect until 3 o'clock p. m., December 22, 1908, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring) of the postoffice at Cold Water, Mich., in accordance with drawings and specifications.

Washington, D. C.—Sealed proposals will be received at the office of the supervising architect until 3 o'clock p. m., December 21, 1908, for the construction of the United States government buildings at the Alaska-Yukon-Pacific Exposition at Seattle, Wash., in accordance with drawings and specification, copies of which may be obtained from the custodian of the court house, custom house and postoffice at Seattle, Wash., or the superintendent of construction at the postoffice, court house and custom house at Tacoma, Wash.

Washington, D. C.—Sealed proposals will be received at the office of the supervising architect until 3 o'clock p. m., December 26, 1908, for the construction (including plumbing, heating apparatus, electric conduits and wiring) of the United States postoffice at Americus, Georgia, in accordance with drawings and specification.

Washington, D. C.—Sealed proposals will be received at the office of the supervising architect until 3 o'clock p. m., December 29, 1908, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring) of the United States postoffice at Alton, Ill., in accordance with drawings and specifications.

Trade Literature

From Union Radiator Company, Johnstown, Pa.: "Concord Steam and Hot Water Radiators," an up-to-date catalogue, size 6x8½ inches, 96 pages, in heavy iron brown cover, embossed in gold, with a neat design. The inside of the cover is lined with a lighter shade of brown paper, bearing the imitation of a water mark. The book is printed on highly glazed paper, and it contains about seventy-five half-tone illustrations of the company's products, including radiators, valves, expansion tanks, damper regulators, heat generators, gauges, thermometers, floor and ceiling plates, etc., and a view of the factory does good service as a frontispiece. The engraving and printing have been done with great care, making it a de luxe book, which will reflect credit upon the company in whose interest it has been published.

From the Sanitary Manufacturing Company, of Hamilton, Ohio: "The Hamilton Gem Water Closets," Catalogue No. 21, 9x11½ inches, 116 pages, bound in cloth. This is an excellent sample of up-to-date catalogue-making. It is handsomely printed in colors on highly glazed paper, and, last, but not least, **it has been compiled in a most admirable manner, the fixtures illustrated being accompanied by a complete description** in a clear and concise language that is easily understood by anybody who knows English. This is probably the first time an earnest effort has been made to make **a catalogue of plumbing goods a really readable book,** and both the company and its compiler deserve commendation for the excellent result attained. The fixtures illustrated and described in such an entertaining and attractive manner are the company's large line of "Hamilton Gem" closets, the "Reliable" ball cocks and flush valves, the "Hamilton Gem" closet seats, and high and low closet tanks.

Following His Lead.

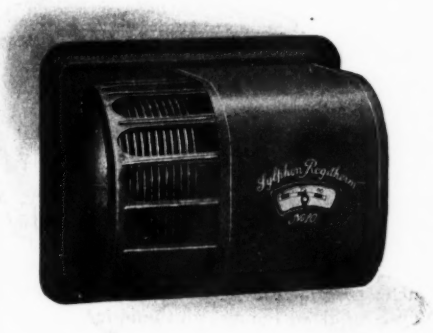
Mother: "What Fighting again? Such a black eye! If you'd only follow the lead of the minister's little boy—"

Tommy: "Ah, I did try ter follow his lead, but he led again wid his left an' dat's where he biffed me."—Philadelphia Press.

Boiler Regulation.

Saving the customer's money by showing him how to economize fuel and maintain an even degree of heat, night or day, not only make sales, but makes friends on the score of giving the customer full value—better satisfaction than he expects.

The IDEAL Sylphon Regitherm will help any good boiler do better work. If you are not familiar with this ingenious device let us send you our descriptive booklet explaining its time, money and labor-saving qualities.



The IDEAL Sylphon Regitherm.

AMERICAN & IDEAL
RADIATORS BOILERS

AMERICAN RADIATOR COMPANY

General Offices, 282-286 Michigan Ave., Chicago.

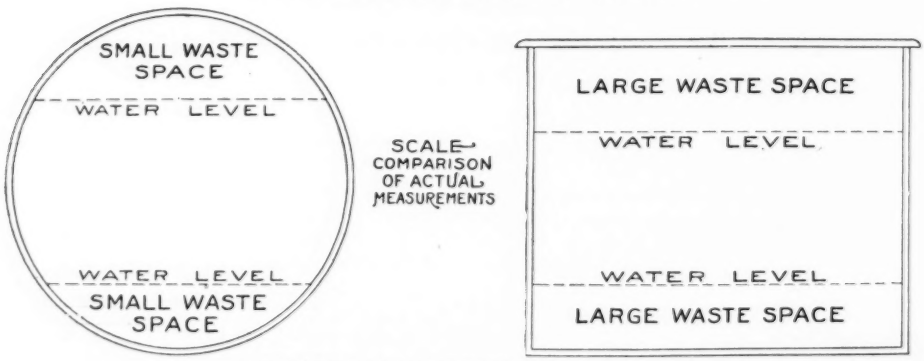
New York	Cincinnati	Cleveland	Atlanta	Brantford, Ont.	Denver
Philadelphia	Boston	Milwaukee	Minneapolis	Seattle	St. Louis
Pittsburg	Buffalo	Indianapolis	Kansas City	Omaha	San Francisco

With the Makers

The Eljer Round China Tank.

The Eljer Company, of Cameron, W. Va., manufactures a round china tank, which it reports becoming very well known in all plumbing trade circles through cards which this company is distributing among jobbers, architects and plumbers.

These cards explain many excellent features incidental to the round shape of the tank. The accompanying sketch shows a comparison of this tank with the ordinary square tank, illustrating the greater efficiency in discharging capacity obtained from this shape over any other shape. In every tank the rubber ball drops, leaving 3¼ inches of water in the tank, and in every tank the water rises but one inch from top of overflow, leaving 4¼ inches of waste at the top of the tank. This waste space of 7½ inches is one-half the capacity of a 15-inch square tank, but in the Eljer round china tank this waste space is but two arcs of a circle and is comparatively small, leaving no space for settling in the bottom of tank. For this reason the smaller round tank actually discharges more water than the ordinary square tank, with less freight and less weight to support against the wall. But by far the greatest advantage claimed for this novel fixture is the fact that its round shape holds it straight in the kilns without warpage. This also eliminates the troubles of ill-fitting covers. From the energetic manner in which this tank is being brought to the notice of the trade there is no doubt but that it will be an important factor in the next building season.



The Eljer round china tank compared with an ordinary square tank.

New Line of Round Steam and Hot Water Boilers.

Phelps Brothers Company, of 210 Water street, New York City, is placing upon the market a new line of round steam and hot water boilers that will be known as the "Phelps." A folder illustrating construction and describing these new boilers has just been issued. The company will also continue the manufacture of its line of "New Era" round boilers.

Gas Burners Free for the Asking.

The Northern Syndicate this week offers to send 1,000 Doylair gas burners free of charge to readers of "Domestic Engineering" in order to acquaint the trade with their excellent qualities. These burners are very convenient wherever a quick, powerful and clean heat is desired. In writing for this sample burner it's only necessary to state whether it is to be used for artificial or natural gas. The company's address is Northern Syndicate, Dept. B., 213 East Randolph street, Chicago.

A New Portable Shower Bath.

A. Weiskittel & Son Company, of Baltimore, Md., has just placed on the market a new portable shower bath of a heavy and massive design, beautifully finished and nickel-plated. The water sprinkler at top is 6½ inches in diameter and is supplied with a special heavy corrugated tubing, with hold-fast faucet connection, so that the water pressure cannot force the bulb off the bath cock. It is supplied with either rubber or white duck curtain.

The Central Supply Company, of Worcester, Mass., has added four additional men to its selling force, who will devote their attention to the advancement of the interests of the Sure Seal system of vacuum heating being exploited by that company, whose efforts thus far has been highly satisfactory, as reported by its president, Ira P. Smith.

The John T. Young Boiler Company, of Norwich, Conn., of which John T. Young, formerly general manager of the Wm. H. Page Boiler Company, is the moving spirit, and which began business last May, has

equipped premises in the Industrial building in that city, and is turning out heating boilers, which are reported to meet with a gratifying reception by the trade.

The Wells Brothers Company, of Greenfield, Mass., manufactures of taps and dies, reports a good season's business for that portion of 1908 so far passed, particularly in its export trade, which has increased from three to four hundred per cent.

Patents

903,250. Air-Valve for Radiators. Thomas Wheatley, Syracuse, N. Y.

903,530. Automatic Cylinder Relief and Vacuum Valve. Byrd O. Yearwood and Robert C. Pattison, Portsmouth, Va., assignors of one-fourth to Edward Schaefer, Toccoa, Ga.

903,538. Hose-Rack. Charles F. Bowes, Chicago, Ill., assignor to W. D. Allen Manufacturing Company, Chicago, Ill., a Corporation.

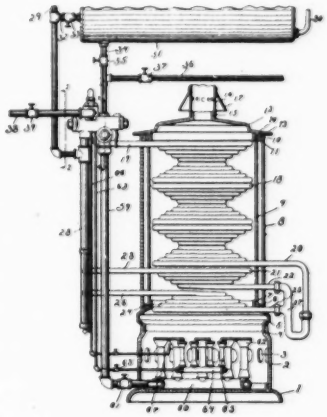
903,614. Automatic Cut-Off Cock for Gas-Fixtures. Ralph E. Staples, Cambridge, Mass., assignor of one-fifth to Charles H. Sprague, Cambridge, Mass., one-fifth to William B. Pendleton, Haverhill, Mass., one-fifth to Samuel G. Potter, Melrose, Mass., and one-tenth to Mary A. Sprague, Cambridge, Mass.

903,668. Tool-Chest. Charles Carl, Philadelphia, Pa.

903,436. Valve. Charles J. Benzenhafer, Philadelphia, Pa.

903,700. Steam and Hot-water Heater. John E. Frost, Watkins, N. Y.

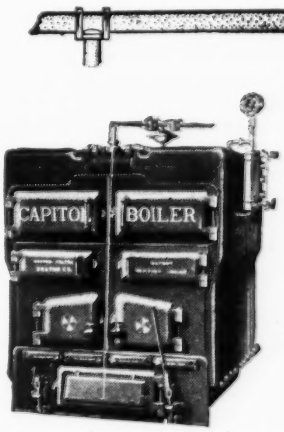
903,862. Water-heater. Herbert S. Humphrey, Kalamazoo, Mich. The most notable claim for this invention is as follows: "The combination with a water heater, of a plurality of gas burners therefor arranged in two groups; a circulation system comprising a delivery and a return pipe; a cold water inlet or supply



pipe; a water valve casing having an inlet passage, a discharge passage, and a circulation passage therein, said water supply pipe being connected to said inlet passage, said return pipe of said circulation system being connected to said circulation passage and said discharge passage being connected to said water heater; a water inlet valve; a circulation valve adapted to

CAPITOL BOILERS AND RADIATORS

NO SIR-E-E



No other make of Boiler equals **Capitol Boilers** in universal satisfaction and economy.

Capitol Boilers are in a class by themselves with these exclusive features: Divided Section—Quick Repair—Fuel Economy—Simplicity in Operation—Saving Expense in Installation—Reliability in Construction—Completeness in Heating Efficiency. You ought to sell **Capitol Boilers** because your trade should get the BEST. "It is better to be safe than sorry." Send for Catalog.

United States Heater Company.

General Offices and Works: Fort St. and Campbell Ave., DETROIT, MICH.

Branches:

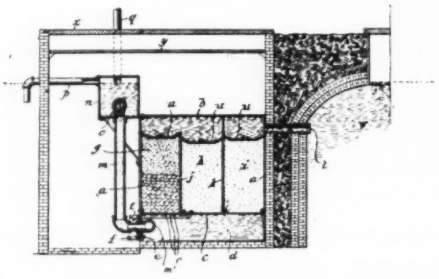
DETROIT	139 Jefferson Ave.
NEW YORK	129 Worth St.
CHICAGO	34 Dearborn St.
KANSAS CITY, MO.	120 W. 11th St.
OMAHA, NEB.	916 Farnam St.

Sales Agencies:

ST. LOUIS, MO., L. M. Rumsey Manufacturing Co.
DENVER, COLO., Kellogg & Stokes Stove Co.
MINNEAPOLIS, MINN., Plumbing & S. F. Supplies Co.
NORFOLK & RICHMOND, VA., Virginia-Carolina Supply Co.

close said circulation passage controlled by said water inlet valve; a gas valve casing having an inlet chamber and a discharge chamber therein, said discharge chamber having two discharge passages; pipes connecting said discharge passages to said groups of burners; valves in said connecting pipes; a gas inlet valve for controlling the connecting passage for said inlet and discharge chambers; a thermostat arranged to control said gas inlet valve; a discharge valve for controlling one of said discharge passages of said discharge chamber; connections for said discharge valve to said water inlet valve whereby said discharge valve is opened by said water valve; and a pilot burner connected to said gas inlet chamber, for the purpose specified."

904,389. Filter. John P. White, Fremont, Ohio. The most important claims for this invention follow herewith: "In a filter, a filtering chamber filled with loose granular material, and a perforated weight gravitatingly supported directly on top of said material and provided with hinged marginal sections whose edges engage the side walls of the chamber. In a filter, the combination of a casing, a sediment chamber formed



in the bottom of the casing and extending its full length, the top wall of said sediment chamber being perforated near the front wall of the casing, a series of filtering chambers above the sediment chamber, each chamber being provided with packing means which leaves a clear water space above each body of filtering material, the last one of said chambers being provided with an outlet at its upper end above said packing means, an inlet pipe connected to the sediment chamber at the end thereof adjacent to said perforations, a receiving chamber attached to the upper end of the inlet pipe and provided with a supply pipe and an overflow pipe, substantially as described."

Burlington, Iowa.—The Russell Sewage Disposal Company, of this city, has secured the contract for the installation of a sewerless sewerage system at the Citizens' Savings Bank building, West Branch, Iowa.—Adv.

THE CELEBRATED

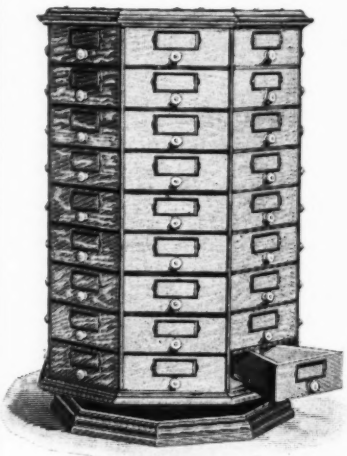
BELL WASHER

TAKE NOTICE: All washers manufactured by Andrew Bell will be stamped "The Bell" in future. Samples sent by mail. Made only by

ANDREW BELL

375 Market Street, Newark, N. J.

Revolving Cases



For Plumbers' Stores

What the PLUMBING STORES HAVE BEEN LOOKING FOR, viz: A REVOLVING CABINET which will occupy a small space and hold a large quantity of small articles, such as tips, burners, washers, bumpers, etc.

The Cabinet manufactured by the American Bolt and Screw Case Co., Dayton, Ohio., meets this want. **Send for Catalogue and Price List.**

THE AMERICAN BOLT AND SCREW CASE CO., Dayton, Ohio, U. S A.

"Practical Wrinkles FOR THE Plumber"

A collection of practical and handy methods, devices and contrivances in plumbing work. 25 full pages of cuts, showing 105 illustrations, and 100 pages of text of utmost value to workman.

Price, postpaid, - - - $1.00

"Questions and Answers on the Practice and Theory of Sanitary Plumbing"

8th Edition—Fully Illustrated—400 Examination Questions

A THOROUGHLY PRACTICAL PLUMBERS' BOOK

A Complete Preparation for Board of Health Examinations

Price, Postpaid, $1.00

"Questions and Answers on the Practice and Theory of Steam and Hot Water Heating"

A Thoroughly Practical Reference Book for Steam and Hot Water Fitters. **Price, Postpaid, $1.00**

R. M. STARBUCK & SONS

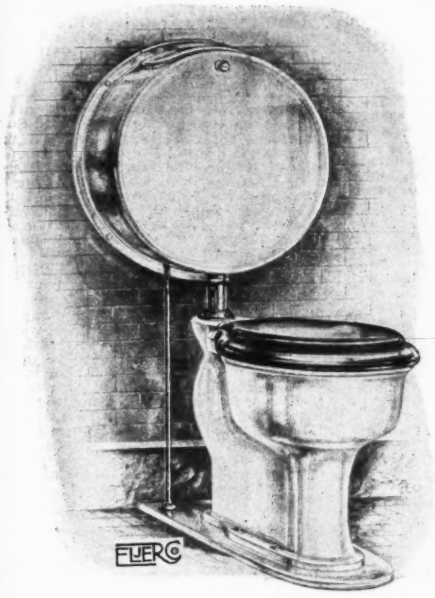
Asylum Street HARTFORD, CONN.

HEADQUARTERS FOR

PLUMBERS' TOOLS

Write for our Tool Catalogue and Publications Catalogue

ELJER CHINA TANK



PATENTS NOW PENDING
Both mechanical and design

Same material as bowl with no metal linings to corrode or leak.

No wood to open up at joint or become saturated with foul dampness.

The round shape can be fired without warpage—crookedness—or illfitting covers.

Extra heavy fittings throughout.

MANUFACTURED BY

ELJERCO

CAMERON
WEST
VIRGINIA

FREE

We want to acquaint 1,000 Plumbers, Tinners, Hardware and other dealers in the United States with

Doylair Gas Devices

The DOYLAIR odorless Gas Burner requires no regulation. Perfect combustion whether you use three or ten feet of gas per hour.

For Hot Water, Tea or Coffee Urns

Hotels, Restaurants, Barber Shops

Factory, Shop, Store, Home

For Laundry Stoves, Gas Stoves, Gas Heaters

Soldering and Metal Melting

Jewelers, Chemists, Druggists, Laboratory

Patent Pending.
⅛ in. connection.

1,000 Doylair Gas Burners

Useful, wherever a quick, powerful, and clean heat is desired.

Will fuse a copper wire in a few seconds.

Can be attached to any standard connection.

Order one on your business letterhead and we will send this burner to you absolutely free, post-paid. We limit each dealer to one. Will you be one of the 1,000 to respond?

When ordering specify for Artifical or Natural Gas.

Price, post-paid, 50 cents each.

Northern Syndicate
DEPT. B
213 E. Randolph St., Chicago

CLASSIFIED ADVERTISEMENTS

The rate of advertising under this heading is 10 cents a line an insertion, remittance to be made with order. The average advertisement runs five words to a line. To insure insertion in this column copy should be received not later than Wednesday afternoon.

Help Wanted.

WANTED—RADIATOR AND BOILER salesman; applicants state age, experience, salary and territory with which he is familiar. Address No. 981, "Domestic Engineering," Chicago.

WANTED — TRAVELING SALESman for full line of plumbing, heating and mill supplies, by one of the largest houses canvassing central and southern territory. Must knew the business thoroughly and come well recommended. Address No. 980, "Domestic Engineering," Chicago.

WANTED—SALES MANAGER FOR New York branch of prominent Gate Valve Manufacturing Company, engineering or mechanical knowledge along the valve lines necessary, as well as executive and sales ability and experience. Address, giving all details that would naturally be expected in such a matter. No. 982, "Domestic Engineering," Chicago.

WANTED—A MAN OF ENERGY and ability to take charge of our plumbing, tinning and steam heating department. Must possess sufficient executive or business ability to take charge of this end of the business and make it successful. Will sell an interest if party wants to buy and treat the right man liberally as to terms. Our business is large and this end of it has been very profitable. Unusual opportunity for the right man. References required. Rock Springs Lumber Co., Ltd., Rock Springs, Wyo.

Situations Wanted.

A YOUNG MARRIED MAN, FAmiliar with every detail of the plumbing supply business desires to make a change. State position to be filled and salary. Address No. 977, "Domestic Engineering," Chicago.

SITUATION WANTED — EXPERIenced, high-class traveling salesman (who can sell goods). Can give A1 reference. Will consider proposition from any reliable firm. Address No. 979, "Domestic Engineering," Chicago.

For Sale.

FOR SALE—A PLUMBING AND HEATING business; town of 5,000; can stay in my building; Address William Haworth, Kaukauna, Wis.

FOR SALE.—ONE FOUR HUNDRED horse power Warren Webster feed water heater, safety valve grease controller, complete; used six months; reasonable. Address M. J. Hawkins, Albany, N. Y.

Agencies Wanted.

SALESMAN—EXPERIENCED, DEsires to represent manufacturers of plumbing, steam and gas specialties, salable to jobbers' trade in New York and vicinity. Address Pearce & McCall, 140 W. 42nd St., New York City.

EXPERIENCED AND RESPONSIble salesman desires to represent in Chicago manufacturers of plumbers' or steam specialties salable to jobbers, the trade or to consumers; nothing trifling considered; highest references. Address No. 944, "Domestic Engineering," Chicago.

THESE ADS PAY—M. J. SCHUSter, Oklahoma City, writes: The ad "591" which I carried in "Domestic Engineering" some time ago, regarding the sale of my shop, brought the desired results, and I can recommend your paper as a No. 1 advertising medium.

BOOKS.

Fifty Plumbing Charts.—A Layout of fifty Jobs, giving sizes of all piping, Roughing-in Details for all Fixtures, etc. An awfully handy Reference—when in doubt—for the small sum of 25 cents, postpaid, delivered. "Domestic Engineering," Chicago.

Air Valves for Steam Heating Systems.—Written by W. H. Wakeman, an expert steam engineer. Shows to advantage how to use, why to use and where to use air valves. Paper bound, 7½x5¼ inches; 20 illustrations; postpaid, 25 cents. "Domestic Engineering," Chicago.

Sizes of Flow and Return Steam Mains.—Contributions from thirty heating engineers of different cities in United States, giving current practice; full of practical advice and useful tables. Bound in boards, 6¼x4¼ inches, 104 pp.; postpaid, 50 cents. "Domestic Engineering," Chicago.

Kitchen Boiler Connections.—Range boilers and water backs under various conditions offer an occasional difficulty to the plumber, but the remedy to apply in every case can be found in this book. It contains 196 pages and 113 illustrations and is worth many times the price we ask, $1.00, delivered. "Domestic Engineering," 49-53 N. Jefferson St., Chicago, Ill.

A Guide to Testing Plumbing.—By Jno. K. Allen, Member of the American Society of Inspectors of Plumbing and Sanitary Engineers. A complete treatise showing the necessity of testing new and old work; containing a full description of the different methods of testing drainage, plumbing and gas piping systems. 17 illustrations. Postpaid, 25 cents, delivered. "Domestic Engineering," Chicago.

Practical Steam and Hot Water Heating.—By A. G. King. This work consists of a series of blue prints, showing in full detail the proper installation of steam and hot water heating plants. It is a practical book for the practical man. No steamfitter's library is complete without it. Price, $5.00, delivered. "Domestic Engineering," 49-53 N. Jefferson St., Chicago, Ill.

Notes on Heating and Ventilation.—An invaluable Course of Suggestions for the Steamfitter who understands the Simpler Forms of Construction and Operation of Heating Systems, but who is striving to complete his Knowledge of the Business. By John R. Allen, Professor Mechanical Engineering, University of Michigan. Two hundred pages. Cloth bound. Price, $2, delivered. "Domestic Engineering," Chicago.

Swimming Pools.—Their construction, cold and hot water supply; various methods of heating water; directions as to selecting correct sizes of heaters. A complete guide, containing the latest information on the subject. By Jno. K. Allen, Associate Member of American Society of Heating and Ventilating Engineers, Editor of "Domestic Engineering." Over 30 illustrations. Bound in cloth. Price, 50 cents, postage paid. "Domestic Engineering," Chicago.

Export Trade

A firm having connections in important trade centers in England and Continent

Manufacturers and Jobbers

are requested to send Price List and Quotations to the

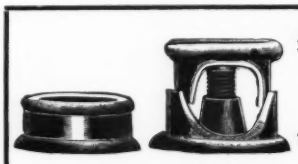
COLUMBUS SHIPPING CO., Ltd.
71 High Holborn, London, W. C., England

Rack Labels

Practical for Plumbers

They are mighty good things, ought to be in every shop. Easily applied to shelves, racks or drawers. Shows what you want at a glance, no more guessing or delayed customers. Not only tells the article but illustrates it. Systematizes and facilitates stock taking, gives a neater and smarter appearance to shops. It's a money saver! Printed on water-proof card in plain readable type. Prices low—prices direct or from F. W. Webb Mfg. Co., Elm St., Boston, Mass.

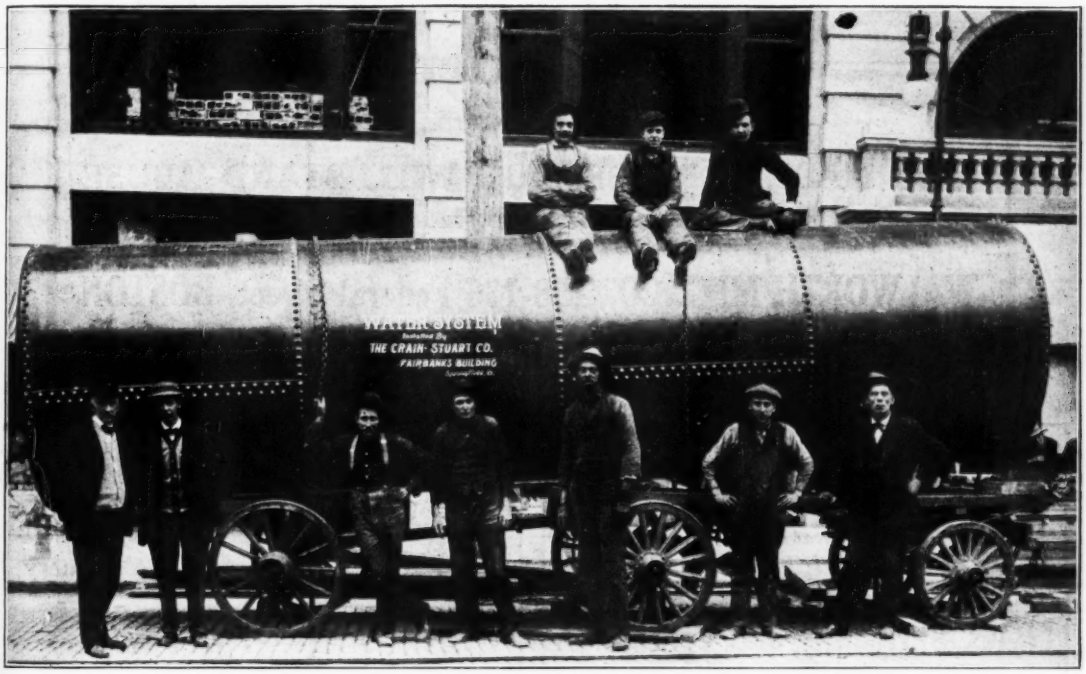
MERCANTILE LABEL CO.
NASHUA, N. H.



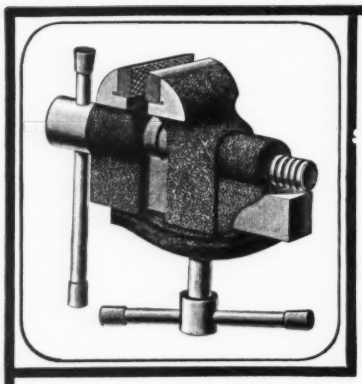
Adjustable Radiator Foot Rest

The time saved on each job pays for them—can be used for bath tubs and other fixtures

The Jennison Company, Fitchburg, Mass.
Sold by Jobbers



Boiler for the Water System being installed in the new Fairbanks Building at Springfield, O., by The Crain-Stewart Co. of that city. The gentleman on the extreme left, with a derby hat, is Mr. Crain; next to him, with the soft hat, stands Charles Stewart, both of the Crain-Stewart Co. The new Fairbanks is the largest store and office building in Springfield.



IF YOUR REQUIREMENTS CALL FOR A

SOLID STRONG SERVICEABLE **PIPE VISE**

USE THE BEST

AS YOU WILL IF YOU BUY THE

Walworth Five Inch Bench Vise

IT IS WELL WORTH THE PRICE

IT IS MADE FOR USE, BUT WILL STAND ABUSE

If your jobber does not carry it in stock, write

WALWORTH MFG. CO., 128-136 Federal Street, BOSTON

You Want This Book

because it is a *practical* book—because it will show you how to do *better work*—because it will *put money down in your pants pocket.*

Notes on Heating and Ventilation

By JOHN R. ALLEN
Junior Professor of Mechanical Engineering
University of Michigan

contains *the very essence of expert knowledge—the boiled-down results of hundreds of experiments*—that vital, practical, *dollars-and-cents* kind of teaching that you can't get except by combining scientific study with actual practice.

There is no better authority on *Heating and Ventilation* than Prof. Allen. He is recognized as a master of these subjects And you get the condensed results of *all* his study, and *all* his experiment and *all* his actual work in the engineering field **for only $2.** You can't be a first-class, up-to-date man unless you make the knowledge in this book yours.

Tear out this page, write your name and address on the margin and mail it with a $2 bill *at our risk. Do it now.*

Domestic Engineering

58-64 North Jefferson Street, Chicago, Ill.

25 LEADING AMERICAN HEATING ENGINEERS'

Answers to an apprentice's query

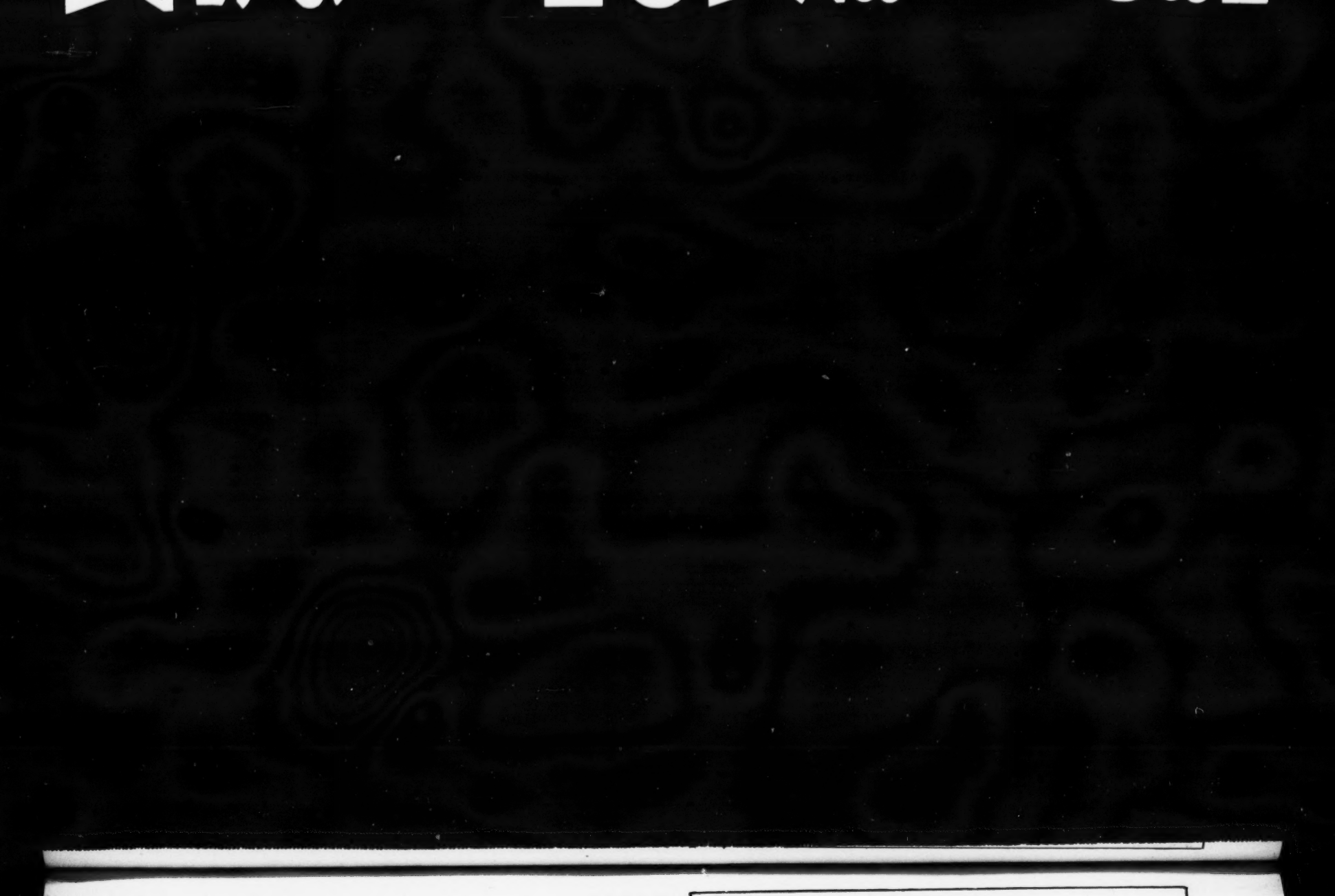
as to correct sizes of pipes in heating plant, are published in a book entitled

Sizes of Flow and Return Steam Mains

These replies give the practice in some of the leading shops in many different cities of the country, with tables and diagrams. A reliable reference book for the steamfitter. Size 4½ x 6½ inches; bound in red cloth; postpaid, 50 cent, in stamps or money order. Write for our Catalogue of Books on Plumbing, Steam and Hot Water Heating.

Book Department

DOMESTIC ENGINEERING

49-53 North Jefferson Street, Chicago

THE ADVERTISEMENTS IN DOMESTIC ENGINEERING ARE INDEXED. TURN TO PAGE XXVI.